transactions of the ASME

SOCIETY RECORDS ASME ANNUAL AM-5 JANUARY 1977

indexes to

1978 publications

WHERE TO FIND ASME TRANSACTIONS

INDEXES TO ASME PAPERS AND PUBLICATIONS

INDEX TO MECHANICAL ENGINEERING

INDEX TO TRANSACTIONS OF THE ASME

PUBLISHED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

transactions of the ASME

Published by
The American Society of
Mechanical Engineers

Volume 99
JANUARY 1977

indexes to 1976 publications

EDITORIAL STAFF

Editor, **J. J. JAKLITSCH, JR.**
Associate Editor, **HAROLD BREDIN**
Staff Editor, **SAMUEL WALTERS**
Assistant Editor, **ELIZ. CALVELLI**
Special Projects Editor, **NANCY RUETH**
News Editor, **SHANA GOLDBERGER**
Art Editor, **GALINA SAZONOV**
Art Consultant, **MARK SNYDER**
Editorial Production, **VICKI KOESTLER**
Transactions Production, **C. MONAHAN, M. EVDOCHENKO, V. HEANEY, L. ROSENFELD, C. VERHEY**
Editorial Production Assistant, **BARBARA SIGNORELLI**

POLICY BOARD, COMMUNICATIONS

Chairman and Vice President
S. P. KEZIOS

Members-at-Large
R. E. ABBOTT
I. BERMAN
R. C. DEAN
J. W. HOLL

Policy Board Representatives
Basic Engineering, **J. E. FOWLER**
General Engineering, **S. P. ROGACKI**
Industry, **J. E. ORTLOFF**
Power, **A. F. DUZY**
Research, **G. P. COOPER**
Codes and Stds., **P. M. BRISTER**
Nom. Com. Rep., **A. R. CATHERON**
Managing Director, Publishing, **C. O. SANDERSON**

OFFICERS OF THE ASME

President, **EARLE C. MILLER**
Exec. Dir. & Sec'y., **ROGERS B. FINCH**
Treasurer, **ROBERT A. BENNETT**
Vice-Presidents, **H. N. ABRAMSON, R. A. BAKER, P. W. BRAISTED, P. CHIARULLI, A. J. CLARK, JR., R. B. GAITHER, S. GRATCH, J. E. HARDEN, S. P. KEZIOS, K. T. KNIGHT, G. KOTNICK, O. L. LEWIS, J. L. MANGAN, D. R. McLEISH, F. W. NIMMER, J. PARKER, R. E. ROBERTS, J. S. ROY, J. G. H. THOMPSON, R. P. TROWBRIDGE, E. C. WEBER**

Published by The American Society of Mechanical Engineers. The editorial department is located at the headquarters of the Society, 345 East Forty-Seventh Street, New York, N. Y. 10017. Cable address, "Mechaneer," New York.

TRANSACTIONS OF THE ASME is indexed by the Engineering Index, Inc.

Where You Will Find ASME Transactions

In United States and Territories SR-1

In Other Countries SR-4

Indexes to ASME Papers and Publications SR-5

Regular Society Publications, 1976 ..... SR-5

Publications Issued in 1976 ..... SR-6

How to Find Papers Presented at 1976 ASME Meetings SR-5

Currently Available ASME Publications SR-5

Periodicals SR-14

ASME Miscellaneous Papers, 1975 ..... SR-15

Index to Mechanical Engineering, 1976 ..... SR-31

Index to Transactions of the ASME, 1976 ..... SR-117

Where You Will Find the ASME Transactions

In United States and Territories

ALABAMA

Auburn — Auburn University
- Main Library
- Library, Dept. of Mech. Engrg.

Tuskegee — Tuskegee Institute
- School of Engineering Library

University — University of Alabama
- Engineering Library

ARIZONA

Tempe — Arizona State University
- Arizona State University Library
- Mechanical Engineering Library

Tucson — University of Arizona
- University of Arizona Library
- Mech. Engrg. Dept. Library

ARKANSAS

Fayetteville — University of Arkansas
- University Library—Serials Dept.

CALIFORNIA

Berkeley — University of California, Berkeley
- General Library
- Mechanical Engineering Library

Chico — California State University, Chico
- University Library

Davis — University of California, Davis
- Acquisitions Department Library
- Engineering Library

Fresno — Fresno State University
- Periodicals Department
- Student Library—School of Engineering

Fullerton — California State University, Fullerton
- Library/Periodicals
- Division of Engineering Library
- Room E 100

Inglewood — Northrop University
- Alumni Library

Long Beach — California State University at Long Beach
- Univ. Library—Serials Dept.

Los Angeles — University of California
- ASME Student Reference Room Library
- Room 4173 Engineering Bldg. I

University of Southern California
- Engineering Library

Monterey — U.S. Naval Postgraduate School
- Library
- Mechanical Engineering Library

Northridge — San Fernando Valley State College
- Library—Serials Dept.

Pasadena — California Institute of Technology
- Millikan Memorial Library

Pomona — California State Polytechnic University, Pomona
- Main Library
- Mechanical Engineering Dept. Library

Sacramento — California State University, Sacramento
- Main Library

San Francisco — San Francisco State University
- Main Library—Periodical Dept.

San Luis Obispo — California State Polytechnic University, San Luis Obispo
- Library

Santa Barbara — University of California, Santa Barbara
- Elect. Engrg. Bldg.
- Serials Library

Santa Clara — University of Santa Clara
- Varsi Library
- Varsi Library—M. E. Dept.

Public Library

San Diego — San Diego State University
- Library—Serials Department

San Jose — San Jose State University
- Main Library
- Science & Technology Library

Stanford — Stanford University
- Engineering Library
- Durand Room—Mechanical Engrg. Dept.

COLORADO

Boulder — University of Colorado
- Libraries—Serials Department

Denver — University of Denver
- Mary Reed Library

Fort Collins — Colorado State University
- Morgan Library

Golden — Colorado School of Mines
- Arthur Lake Library

CONNECTICUT

Bridgeport — University of Bridgeport
- Library—Periodicals Dept.
- Mechanical Engineering Dept. Library

Storrs — University of Connecticut
- Wilbur Cross Library
- Engineering Library

West Hartford — University of Hartford
- Library

West Haven — University of New Haven

DELAWARE

Newark — University of Delaware
- Morris Library
- Mech. & Aerospace Engrg. Library—Evans Hall

DISTRICT OF COLUMBIA

Washington — Catholic University of America
- Engineering Library

George Washington University
- Library
- Engineering Branch Library

Howard University
- Engineering and Architectural Library

Library of Congress

National Bureau of Standards Library

U.S. Patent Office
- Scientific Library

FLORIDA

Coral Gables — University of Miami
- Main Library—Periodical Dept.

Gainesville — University of Florida
- Engineering Sciences Library

Melbourne — Library—Florida Institute of Technology
- Mechanical/Electrical Engineering Library
- Science Tower

Orlando — Florida Technological Institute
- Mechanical Engineering and Aero Sci. Library
- Technical University Library

Tampa — University of South Florida
- Main Library—Periodical Dept.

GEORGIA

Atlanta — Georgia Institute of Technology
- Library

Marietta — Southern Technical Institute
- Technical Library

HAWAII

Honolulu — University of Hawaii
- Graduate Research Library

Hawaii State Library

IDAHO

Moscow — University of Idaho
- Library—Acquisitions Section
- Mechanical Engineering Dept. Library

ILLINOIS

Chicago — Illinois Institute of Technology
- Library—Technology Center
- Mech. Engrg. Dept. Library

University of Illinois at Chicago Circle
- ASME Student Library

Evanston — Northwestern University
- Technological Institute Library

Peoria — Bradley University
- Library—Periodicals Department

Springfield — Illinois State Library

Urbana — University of Illinois
- Library—Serials Dept.

INDIANA

Angola.....Tri-State University
Perry T. Ford Memorial Library—Periodicals Dept.
Evansville.....University of Evansville
Clifford Memorial Library
Engineering Library
Lafayette.....Purdue University
Notre Dame.....University of Notre Dame
Main Library—Serials Division
Engineering Library
Terre Haute.....Rose-Hulman Institute
Library
Valparaiso.....Valparaiso University
University Library

IOWA

Ames.....Iowa State University
Science and Technology Library
Iowa City.....University of Iowa
University Library—Serials Acquisition Dept.

KANSAS

Lawrence.....University of Kansas
Libraries—Serials Department
Mechanical Engineering Dept. Library
Manhattan.....Kansas State University
University Library
Wichita.....Wichita State University
Mechanical Engineering Dept. Library

KENTUCKY

Lexington.....University of Kentucky
University Library
Engineering Library
Louisville.....University of Louisville
Speed Scientific School Library

LOUISIANA

Baton Rouge.....Louisiana State University
Library
Southern University
Engineering Library
Lafayette.....University of Southwestern Louisiana
Dupre Library
New Orleans.....Tulane University
Howard Tilton Memorial Library
Ruston.....Louisiana Tech University Library

MAINE

Orono.....University of Maine
Library

MARYLAND

Annapolis.....U.S. Naval Academy
Library
College Park .....University of Maryland
Engineering and Physical Sciences Library
Mechanical Engineering Dept. Library

MASSACHUSETTS

Amherst.....University of Massachusetts
Engrg. School Library
Boston.....Northeastern University
Dodge Library
Mechanical Engineering Dept. Library
Cambridge.....Massachusetts Institute of Technology
Library—Serials and Journals
Lowell.....Lowell Technological Institute
Alumni Memorial Library
Medford.....Tufts University
Mech. Engrg. Library
North Dartmouth...Southeastern Massachusetts University
Main Library
Springfield.....Western New England College
Churchill Library
Worcester.....Worcester Polytechnic Institute
Gordon Library
Mech. Engrg. Dept. Library

MICHIGAN

Ann Arbor.....University of Michigan
Engineering Library
Detroit.....University of Detroit
Library—Serial Dept.
Wayne State University
Kresge-Hooker Scientific Library
East Lansing.....Michigan State University
Library—Serials Dept.
Engineering Library
Flint.....General Motors Institute
General Motors Institute Library
Houghton.....Michigan Technological University
Library
Sault Ste. Marie....Lake Superior State College
University Library
Dept. of Engineering Technology Library

MINNESOTA

Minneapolis.....University of Minnesota
Engineering Library

MISSISSIPPI

State College.....Mississippi State University
University Library
University.....University of Mississippi
University Library
Engineering Library—Mechanical Section

MISSOURI

Columbia.....University of Missouri
Engineering Library
Rolla.....University of Missouri at Rolla
Library
St. Louis.....Washington University
Library—Acquisitions Dept.

MONTANA

Bozeman.....Montana State University
Library
Mech. Engrg. Dept. Library

NEBRASKA

Lincoln.....University of Nebraska-Lincoln
Library—Acquisitions Dept.

NEW HAMPSHIRE

Durham.....University of New Hampshire
Main Library
Hanover.....Dartmouth College
Baker Memorial Library

NEW JERSEY

Hoboken.....Stevens Institute of Technology
Main Library
Mechanical Engineering Dept. Library
Newark.....New Jersey Institute of Technology
Library
New Brunswick.....Rutgers—The State University
Library of Science and Medicine
Mechanical & Aerospace Engrg. Dept. Library
Princeton.....Princeton University
Student Reading Room
Engineering Library
Teaneck.....Fairleigh Dickinson University
Library

NEW MEXICO

Albuquerque.....University of New Mexico
Library—Acquisitions Department
Mech. Engrg. Dept. Library
University Park....New Mexico State University
Library

NEW YORK

Albany.....New York State Library
Bronx.....State University of New York Maritime College
Stephen B. Luce Library
Brooklyn.....Polytechnic Institute of New York
Library
Pratt Institute
Library
Brooklyn Public Library
Buffalo.....State University of New York at Buffalo
Science and Engineering Library
Ithaca.....Cornell University
Engineering Library-Carpenter Hall
Jamaica, L.I.....Queens Borough Public Library
New York.....College of the City of New York
Engineering Library—Steinman Hall
Mechanical Engrg. Dept. Library
Columbia University
Egleston Library
Cooper Union
Main Library
Bateman Library—Mech. Engrg. Dept.
Engineering Societies Library
Public Library—Science and Technology Div.

Potsdam.....Clarkson College of Technology
Library
Mechanical Engineering Dept. Library
Rochester.....University of Rochester
Rush Rhees Library
College of Engineering Library
Rochester Institute of Technology
Wallace Memorial Library
Schenectady.....Union College
Library
Stony Brook.....State University of New York, Stony Brook
Engineering Library
Main Library—Periodicals
Syracuse.....Syracuse University
Carnegie Library
Troy.....Rensselaer Polytechnic Institute
Library Serials Dept.

NORTH CAROLINA

Charlotte.....University of North Carolina-Charlotte
Atkins Library—Serials Department
College of Engineering Library
Durham.....Duke University
Library—Periodicals 'E'
Engineering Library—Periodicals 'E'
Greensboro.....North Carolina Agricultural & Tech. State Univ.
Library
Mechanical Engineering Dept. Library
Raleigh.....North Carolina State University at Raleigh
D. H. Hill Library
Mechanical & Aerospace Engrg. Dept. Library

NORTH DAKOTA

Fargo.....North Dakota State University
Library
Grand Forks.....University of North Dakota
Main Library
Mechanical Engineering Dept. Library

OHIO

Ada.....Ohio Northern Library
Heterick Library
Mechanical Engineering Reading Room
Akron.....University of Ohio
Mechanical Engineering Dept. Library
Science and Technology Library
Athens.....Ohio University
University Library
Mechanical Engrg. Library
Cincinnati.....University of Cincinnati
Library
Cleveland.....Case Western Reserve University
The Sears Library
Cleveland State University
Library
Mechanical Engineering Dept. Library
Columbus.....Ohio State University
University Libraries—Aquisitions Dept.
Dayton.....University of Dayton
Library—Periodicals Dept.
Engineers Club of Dayton
Youngstown.....Youngstown State University
Library
Mechanical Engineering Dept. Library

OKLAHOMA

Norman.....University of Oklahoma
Engineering Library
Stillwater.....Oklahoma State University
Library
Tulsa.....University of Tulsa
Sidney Born Technical Library

OREGON

Corvallis.....Oregon State University
Library—Serials Dept.
Kalmath Falls.....Oregon Institute of Technology
Main Library

PENNSYLVANIA

Bethlehem.....Lehigh University
University Library
Mechanical Engineering Dept. Library
Chester.....Widener Colleges
Library
School of Engineering Library
Easton.....Lafayette College
Skillman Memorial Library
Erie.....Gannon College
Library
Lewisburg.....Bucknell University
Bertrand Library—Periodicals Dept.
Mechanical Engineering Dept. Library
Philadelphia.....Drexel University
Library
Mechanical Engineering Library
University of Pennsylvania
Towne Scientific Library
The Franklin Institute
Pittsburgh.....Carnegie-Mellon University
Hunt Library
Mechanical Engineering Library
Carnegie Library of Pittsburgh
University of Pittsburgh
George M. Beiver Engrg. Library
Swarthmore.....Swarthmore College
College Library
University Park....Pennsylvania State University
Pattee Library
Mechanical Engineering Dept. Library
Villanova.....Villanova University
Library
Mechanical Engineering Dept. Library

PUERTO RICO

Mayaguez.....University of Puerto Rico
College of Agricultural and
Mechanics Arts Library
Mechanical Engineering Library

RHODE ISLAND

Kingston.....University of Rhode Island
Library
Providence.....Brown University
Sciences Library

SOUTH CAROLINA

Clemson.....Clemson University
College University
Mech. Engrg. Library
Columbia.....University of South Carolina
McKissick Library—Science Room
Mechanical Engrg. Dept. Library

SOUTH DAKOTA

Brookings.....South Dakota State University
Library
Rapid City.....South Dakota School of Mines and Technology
J. Taylor Library
Mech. Engrg. Dept. Library

TENNESSEE

Cookeville.....Tennessee Tech University
Mechanical Engrg. Dept. Library
Knoxville.....University of Tennessee
Engineering Library
Memphis.....Christian Brothers College
Library—Periodicals Dept.
Memphis State University
John Brister Library—Serials Department
Nashville.....Vanderbilt University
Joint University Libraries
Engrg. and Science Reading Room

TEXAS

Arlington.....University of Texas at Arlington
Library
Aero and Mech. Engrg. Dept. Library
Austin.....University of Texas at Austin
Engineering Library
Beaumont.....Lamar University
Library
Engineering Library
College Station.....Texas A & M University
Library—Serials Record
Dallas.....Southern Methodist University
Science Library
Engineering School Library
El Paso.....University of Texas at El Paso
Main Library
Houston.....University of Houston
Libraries—Serials
Mech. Engrg. Dept. Library
William Marsh Rice University
Fondren Library
Kingsville.....Texas A & I University
Technical Library—School of Engineering
James C. Jernigan Library
Lubbock.....Texas Tech University
Main Library
Mechanical Engineering Dept. Library
Prairie View.....Prairie View Agricultural & Mechanical Univ.
W. R. Banks Library
Engineering Library

UTAH

Logan.....Utah State University
Library
Provo.....Brigham Young University
Central Library
Mechanical Engineering Dept. Library
Salt Lake City.....University of Utah
Engineering Library—Serials Order Dept.
Mechanical Engineering Dept. Library

VERMONT

Burlington.....University of Vermont
Billings Library
Northfield.....Norwich University
Mechanical Engineering Dept. Library
Chaplin Memorial Library

VIRGINIA

Blackburg.....Virginia Polytechnic Institute & State Univ.
Main Library
Charlottesville.....University of Virginia
Engineering Library—Thornton Hall
Norfolk.....Old Dominion College
Library

WASHINGTON

Pullman.....Washington State University
Science Library—Holland Library
Seattle.....Seattle University
Library
Engineering Library—Guggenheim Hall
Mechanical Engineering Library
University of Washington
Engineering Library
Mechanical Engineering Library

WEST VIRGINIA

Montgomery.....West Virginia Institute of Technology
Library—Conley Hall
Mechanical Engrg. Library
Morgantown.....West Virginia University
Engineering Library—Evansdale Campus

WISCONSIN

Madison.....University of Wisconsin
Memorial Library
College of Engrg. Library
Milwaukee.....Marquette University
Engineering Library
Milwaukee School of Engineering
Main Library
University of Wisconsin, Milwaukee
Main Library

WYOMING

Laramie.....University of Wyoming
Coe Library

In Other Countries

ARGENTINA

Buenos Aires.....Sociedad Cientifica

AUSTRALIA

Adelaide.....Public Library of South Australia
Melbourne.....State Library of Victoria
Nedlands.....University of Western Australia
Sydney.....Public Library of New South Wales

CANADA

British Columbia
Vancouver.....University of British Columbia
Library—Applied Science Reading Room
Mechanical Engineering Dept. Library
Ontario
Hamilton.....McMaster University
Physical Science Library
Kingston.....Queen's University
Mechanical Enginering Dept. Library
Toronto.....University of Toronto
Library—Serials Dept.
Engineering Library
Waterloo.....University of Waterloo
Mechanical Engineering Dept. Library
Windsor.....University of Windsor
The Library
Mechanical Engrg. Dept. Library

ENGLAND

Birmingham.....Birmingham Reference Library
Bristol.....University of Bristol Library
Cambridge.....University of Cambridge
Liverpool.....City of Liverpool—Libraries
London.....Royal Aeronautical Society
Manchester.....Manchester College of Science and Technology
Newcastle Upon
Tyne.....North East Coast Institute of Engineers and
Shipbuilders

GERMANY

Berlin-
Charlottenburg.....Technische Universität Berlin
Karlsruhe.....Universitatsbibliothek

HOLLAND

Delft.....Bibliotheek Technische Hogeschool

NORTHERN IRELAND

Belfast.....Queen's University
David Keir Branch Library

MEXICO

Mexico City.....Ciudad Universitaria
Facultad de Ingenieria
Ist Politecnico Nacional Unidad Profesional
Zacatenco
Monterrey.....Instituto Technologico de Monterrey
Biblioteca
Depto. de Matematicas

NEW ZEALAND

Christchurch.....University of Canterbury

SCOTLAND

Glasgow .....Mitchell Library

SOUTH AFRICA

Cape Town.....University of Cape Town Library

TURKEY

Istanbul.....Bogazici Universitesi

Index to ASME Papers and Publications
Volume 98, 1976

This and the following pages will serve as a guide to the current publications of the ASME.

REGULAR SOCIETY PUBLICATIONS, 1976

MECHANICAL ENGINEERING, monthly
ASME Transactions, quarterlies
Series A, *Journal of Engineering for Power*
Series B, *Journal of Engineering for Industry*
Series C, *Journal of Heat Transfer*
Series E, *Journal of Applied Mechanics*
Series F, *Journal of Lubrication Technology*
Series G, *Journal of Dynamic Systems, Measurement and Control*
Series H, *Journal of Engineering Materials and Technology*
Series I, *Journal of Fluids Engineering*
Series J, *Journal of Pressure Vessel Technology*
Applied Mechanics Reviews, monthly
Applied Mechanics Reviews, Annual Index, 1975

PUBLICATIONS ISSUED IN 1976

Books and Reports

Structural Dynamic Aspects of Bladed-Disk Assemblies
Measurement and Prediction of Structural and Biodynamic Crash-Impact Response
Ambient Air Quality Standards—Here We Are, What Do We Do?
Effects of Voids on Material Deformation AMD-Vol. 16
Propagation of Shock Waves in Solids AMD-Vol. 17
Computing in Applied Mechanics AMD-Vol. 18
Mechanics of Fracture AMD-Vol. 19
Constitutive Equations in Viscoplasticity: Computational and Engineering Aspects AMD-Vol. 20
Constitutive Equations in Viscoplasticity: Phenomenological and Physical Aspects AMD-Vol. 21
1976 Advances in Bioengineering
1976 Joint Automatic Control Conference—Productivity
Cavitation and Polyphase Flow Forum—1976
Centrifugal Compressor and Pump Stability, Stall and Surge
Numerical/Laboratory Computer Methods in Fluid Mechanics
ASME Guide for Gas Transmission and Distribution Piping Systems—1976
Computer-Aided Design of Bearings and Seals
Metal Properties for the Petroleum and Chemical Industries
1976 ASME-MPC Symposium on Creep-Fatigue Interaction
Chrome-Moly Steel in 1976
SI-1 ASME Orientation and Guide for Use of SI (Metric) Units—Seventh Edition
SI-2 ASME Text Booklet—SI Units in Strength of Materials—Second Edition
SI-3 ASME Test Booklet—SI Units in Dynamics
SI-4 ASME Text Booklet—SI Units in Thermodynamics
SI-5 ASME Text Booklet—SI Units in Fluid Mechanics
SI-6 ASME Text Booklet—SI Units in Kinematics
SI-8 ASME Text Booklet—SI Units in Vibration
SI-10 Steam Charts
Marine Propulsion Systems
Ocean Resources Utilization
1976 ASME—ANS International Conference on Advanced Nuclear Energy Systems
Pressure Vessels and Piping: Design and Analysis—A Decade of Progress, Volume Three: Materials and Fabrication
Pressure Vessels and Piping: Design Analysis—A Decade of Progress, Volume Four: Quality Assurance—Applications—Components
1976 Elevated Temperature Design Symposium
Limit Analysis Using Finite Elements
1975 Rail Transportation Proceedings
Symposium on Railroad Equipment Dynamics
Research Needs Report: Design, Materials, and Manufacturing Research
Research Needs Report: Energy Conversion Research
1976 National Waste Processing Conference Proceedings—From Waste to Resource Through Processing (with Supplement)
1976 Proceedings of the Fourth Intersociety Conference on Transportation
Companies Holding Certificates of Authorization for Use of Code Symbol Stamps—1976 Edition (with Supplement)
Companies Holding Nuclear Certificates of Authorization
Criteria for Design of Elevated Temperature Class 1 Components in Section III, Division 1, of the ASME Boiler and Pressure Vessel Code

HOW TO FIND PAPERS PRESENTED AT 1976 ASME MEETINGS

The technical programs of the meetings of the Society and of its Professional Divisions have been published in MECHANICAL ENGINEERING and may be located by consulting the index on page SR-31. Many of these papers will be published in MECHANICAL ENGINEERING or the *Transactions* and may be located by reference to the indexes of these publications. A free, up-to-date edition of the ASME Technical Papers Catalog is available on request. Xerox copies of out-of-print technical papers may be purchased from the Engineering Societies Library, 345 E. 47th St., New York, N. Y. 10017. Phone (212) 644-7611.

Special Services

In order to expedite European orders for the ASME Boiler and Pressure Vessel Code and related titles, special arrangements have been made with the British Standards Institution, (T.H.E.), Maryland Avenue, Hemel Hempstead, Herts HP2 4SQ, England, to stock and sell these titles.

For the convenience of our customers on the West Coast, special arrangements have been made with Global Engineering Documentation Services, Inc., 3301 W. McArthur Blvd., Santa Ana, Calif., 92704, to stock and sell Codes and Standards.

Complete sets of all Codes and Standards are available for sale on microfilm from Information Handling Services, Denver Technological Center, P. O. Box 1154, Englewood, Colorado 80110

CURRENTLY AVAILABLE ASME PUBLICATIONS

ASME members are usually eligible for a 50% discount on special publications and a 20% discount on Codes and Standards (exceptions are indicated). In all cases, L before a price indicates the list price of the volume, and M indicates member price. All books may be ordered from the ASME Order Department, 345 E. 47th Street, N.Y., N.Y. 10017.

AMERICAN NATIONAL STANDARDS

Elevators, Plumbing and General Standards

A13.1-1975 Scheme for the Identification of Piping Systems, Book No. L00033, L-$3.00, M-$2.40
A17.1-1971 Elevators, Dumbwaiters, Escalators and Moving Walks (With Supplements a to f), Book No. A00047, L-$18.00, M-$14.40
A17.1a-1972 Supplement only, Book No. A00048, L-$1.75, M-$1.40
A17.1b-1973 Supplement only, Book No. A00071, L-$2.25, M-$1.80
A17.1c-1974 Supplement only, Book No. A00074, L-$2.25, M-$1.80
A17.1d-1e-1f-1975 Supplements only, Book No. A00080, L-$3.00, M-$2.40
A17 Guide Evacuation of Passengers from Stalled Elevators (Not an ANSI Standard), Book No. A00070, L-$2.25, M-$1.80
A17.1-1973 Inspectors' Manual-American National Standard Practice for the Inspection of Elevators, Escalators and Moving Walks, Book No. A00049, L-$10.00, M-$8.00
A40.5-1943 Threaded Cast Iron Pipe for Drainage, Vent and Waste Services, Book, No. M00022, L-$2.25, M-$1.80
A40.8-1055 National Plumbing Code (Withdrawn by ANSI), Book No. L00010, L-$6.75, M-$5.40
A90.1-1976 Safety Standard for Manlifts, Book No. B00008, L-$4.50, M-$3.60
A112.1.2-1942 (R1973) Air Gaps in Plumbing Systems, Book No. J00041, L-$2.75, M-$2.20
A112.6.1-1972 Supports for Off-the-Floor Plumbing Fixtures for Public Use, Book No. J00043, L-$3.50, M-$2.80
A112.11.1-1973 Drinking-Fountains and Self-Contained Mechanically Refrigerated Drinking-Water Coolers, Book No. J00039, L-$3.25, M-$2.60
A112.14.1-1975 Backwater Valves, Book No. J00035, L-$3.00, M-$2.40
A112.18.1-1975 Finished and Rough Brass Plumbing Fixture Fittings, Book No. J00029, L-$4.00, M-$3.20
A112.19.1-1973 Enameled Cast Iron Plumbing Fixtures, Book No. J00011, L-$3.50, M-$2.80
A112.19.2-1973 Vitreous China Plumbing Fixtures, Book No. J00012, L-$4.50, M-$3.60
A112.21.1-1968 (R1974) Floor Drains, Book No. J00040, L-$3.50, M-$2.80
A112.21.2-1971 Roof Drains, Book No. J00002, L-$2.75, M-$2.20
A112.26.1-1969 (R1975) Water Hammer Arresters, Book No. K00020, L-$4.00, M-$3.20
A112.36.2-1975 Metallic Cleanouts, Book No. J00045, L-$3.00, M-$2.40
A113.1-1964 (R1971) Safety Code for Mechanized Parking Garage Equipment, Book No. M00054, L-$5.00, M-$4.00

Threads & Limits and Fits

B1 Report (1972) ISO Metric Screw Threads (Not an ANSI Standard), Book No. N00046, L-$4.50, M-$3.60
B1.1-1974 Unified Inch Screw Threads (UN and UNR Thread Form), Book No. M00028, L-$15.00, M-$12.00
B1.2-1974 Gages and Gaging for Unified Inch Screw Threads, Book No. N00058, L-$11.00, M-$8.80
B1.5-1973 Acme Screw Threads, Book No. N00027, L-$6.75, M-$5.40
B1.7-1965 (R1972) Nomenclature, Definitions and Letter Symbols for Screw Threads, Book No. L00011, L-$3.25, M-$2.60
B1.8-1973 Stub Acme Screw Threads, Book No. N00028, L-$4.50, M-$3.60

B1.9-1973 Buttress Inch Screw Threads 7°/45° Form With 0.6 Pitch Basic Height of Thread Engagement, Book No. N00029, L-$5.00, M-$4.00
B1.10-1958 Unified Miniature Screw Threads, Book No. N00025, L-$3.00, M-$2.40
B1.11-1958 (R1972) Microscope Objective Thread, Book No. N00020, L-$2.25, M-$1.80
B1.12-1972 Class 5 Interference—Fit Thread, Book No. N00032, L-$2.75, M-$2.20
B1.16-1972 American Gaging Practice for Metric Screw Threads, Book No. N00026, L-$5.00, M-$4.00
B2.1-1968 Pipe Threads (Except Dryseal), Book No. L00018, L-$5.50, M-$4.40
B2.2-1968 Dryseal Pipe Threads, Book No. M00036, L-$5.50, M-$4.40
B2.4-1966 (R 1974) Hose Coupling Screw Threads, Book No. K00014, L-$3.25, M-$2.60
B4.1-1967 (R1974) Preferred Limits and Fits for Cylindrical Parts, Book No. L00022, L-$4.00, M-$3.20

Machine Tools

B5.1-1975 T-Slots, Their Bolts, Nuts and Tongues, Book No. M00024, L-$3.00, M-$2.40
B5.5-1959 (R1972) Rotating Air Cylinders and Adapters, Book No. L00031, L-$2.25, M-$1.80
B5.8-1972 Chucks and Chuck Jaws, Book No. J00024, L-$4.50, M-$3.60
B5.9-1967 (R1972) Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes and Automatic Lathes, Book No. M00010, L-$4.00, M-$3.20
B5.10-1963 (R1972) Machine Tapers, Book No. L00004, L-$4.00, M-$3.20
B5.11-1964 (R1973) Spindle Noses and Adjustable Adapters for Multiple Spindle Drilling Heads, Book No. M00008, L-$2.25, M-$1.80
B5.16-1952 (R1972) Accuracy of Engine and Tool Room Lathes, Book No. J00004, L-$2.25, M-$1.80
B5.18-1972 Spindle Noses and Tool Shanks for Milling Machines, Book No. M00009, L-$3.50, M-$2.80
B5.20-1958 Machine Pins, Book No. L00003, L-$2.25, M-$1.80
B5.25-1968 (R1975) Die Sets, Book No. L00027, L-$3.50, M-$2.80
B5.28-1971 Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, Book No. L00009, L-$2.75, M-$2.20
B5.32-1953 Designation and Working Ranges of Grinding Machines, Book No. J00028, L-$2.25, M-$1.80
B5.33-1970 External Cylindrical Grinding Machines—Plain, Book No. M00038, L-$2.75, M-$2.20
B5.35-1969 (R1975) Machine Mounting Specifications for Abrasive Discs and Plate Mounted Wheels, Book No. M00035, L-$3.50, M-$2.80
B5.37-1970 External Cylindrical Grinding Machines—Centerless, Book No. M00039, L-$2.25, M-$1.80
B5.40-1968 Spindle Noses and Tool Shanks for Horizontal Boring Machines, Book No. M00048, L-$3.50, M-$2.80
B5.41-1968 (R1973) Quill Flanges and Spindle Ends for Upright and Horizontal Drill Spindles for Production Type Drilling Machines, Book No. K00018, L-$2.25, M-$1.80
B5.42-1970 External Cylindrical Grinding Machines—Universal, Book No. M00040, L-$2.50, M-$2.00
B5.43-1971 Modular Machine Tool Standards, Book No. M00021, L-$3.50, M-$2.80
B5.44-1971 Rotary Table Surface Grinding Machines, Book No. M00061, L-$3.50, M-$2.80
B5.45-1972 Milling Machines, Book No. M00067, L-$2.75, M-$2.20
B5.46-1972 Symbols for Machine Tool Indicator Plates, Book No. M00065, L-$4.50, M-$3.60
B5.47-1972 Milling Machine Arbor Assemblies, Book No. M00074, L-$3.50, M-$2.80

Gears & Power Transmission Safety

B6.1-1968 (R1974) Tooth Proportions for Coarse-Pitch Involute Spur Gears, Book, No. M00011, L-$4.00, M-$3.20
B6.7-1967 (R1974) Tooth Proportions for Fine-Pitch Involute Spur and Helical Gears, Book No. M00026, L-$5.00, M-$4.00
B6.9-1956 (R1962) Design for Fine-Pitch Wormgearing, Book No. J00026, L-$2.25, M-$1.80
B6.12-1964 (R 1974) Nomenclature of Gear-Tooth Wear and Failure, Book No. L00012, L-$4.00, M-$3.20
B6.13-1965 (R 1974) System for Straight Bevel Gears, Book No. M00020, L-$4.00, M-$3.20
B15.2-1972 Safety Standard for Mechanical Power Transmission Apparatus, Book No. M00009, L-$4.00, M-$3.20

Pipe Flanges, Fittings, Gaskets & Valves

B16.1-1975 Cast Iron Pipe Flanges and Flanged Fittings—Class 25, 125, 250 and 800, Book No. J00017, L-$6.00, M-$4.80
B16.3-1971 Malleable-Iron Threaded Fittings, 150 and 300 lb., Book No. L00005, L-$4.00, M-$3.20
B16.4-1971 Cast Iron Threaded Fittings, 125 and 250 lb., Book No. J00022, L-$3.50, M-$2.80
B16.5-1973 Steel Pipe Flanges, Flanged Valves and Fittings (Including Ratings for Class 150, 300, 400, 600, 900, 1500 and 2500), Book No. M00015, L-$12.00, M-$9.60
B16.9-1971 Factory-Made Wrought Steel Buttwelding Fittings, Book No. M00014, L-$4.00, M-$3.20
B16.10-1973 Face-to-Face and End-to-End Dimensions of Ferrous Valves, Book No. J00031, L-$4.00, M-$3.20
B16.11-1973 Forged Steel Fittings, Socket-Welding and Threaded, Book No. M00016, L-$3.00, M-$2.40
B16.12-1971 Cast-Iron Threaded Drainage Fittings, Book No. J00021, L-$3.50, M-$2.80
B16.14-1971 Ferrous Pipe Plugs, Bushings and Locknuts with Pipe Threads, Book No. J00032, L-$3.50, M-$2.80
B16.15-1971 Cast Bronze Threaded Fittings, 125 and 250 lb., Book No. J00010, L-$3.50, M-$2.80
B16.18-1972 Cast Bronze Solder Joint Pressure Fittings, Book No. J00015, L-$3.50, M-$2.80
B16.20-1973 Ring-Joint Gaskets and Grooves for Steel Pipe Flanges, Book No. L00030, L-$4.50, M-$3.60
B16.21-1962 Nonmetallic Gaskets for Pipe Flanges, Book No. L00015, L-$3.00, M-$2.40
B16.22-1973 Wrought Copper and Bronze Solder-Joint Pressure Fittings, Book No. M00030, L-$3.50, M-$2.80
B16.23-1976 Cast Copper Alloy Solder Joint Drainage Fittings - DWV, Book No. J00014, L-$15.00, M-$12.00
B16.24-1971 Bronze Flanges and Flanged Fittings, 150 and 300 lb., Book No. J00009, L-$3.50, M-$2.80
B16.25-1972 Buttwelding Ends, Book No. J00013, L-$4.00, M-$3.20
B16.26-1975 Cast Copper Alloy Fittings for Flared Copper Tubes, Book No. J00008, L-$3.00, M-$2.40
B16.28-1964 (R1972) Wrought Steel Buttwelding Short Radius Elbows and Returns, Book No. M00053, L-$4.00, M-$3.20
B16.29-1973 Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings, Book No. N00057, L-$4.00, M-$3.20
B16.31-1971 Non-Ferrous Pipe Flanges, 150, 300, 400, 600, 900, 1500 and 2500 lb., Book No. J00042, L-$4.00, M-$3.20
B16.32-1973 Cast Bronze Solder - Joint Fittings for Solvent Drainage Systems, Book No. J00044, L-$3.50, M-$2.80
B16.33-1973 Small Manually Operated Metallic Gas Valves in Gas Distribution Systems Whose Maximum Allowable Operating Pressure Does Not Exceed 60 PSIG or 125 PSIG, Book No. J00006, L-$4.00, M-$3.20
B16.34-1973 Steel Butt-Welding End Valves, Book No. J00018, L-$10.50, M-$8.40
B16.36-1975 Steel Orifice Flanges, Class 300, 600, 900, 1500 and 2500, Book No. J00046, L-$4.00, M-$3.20

Fasteners & Keys

B17.1-1967 (R1973) Keys and Keyseats, Book No. J00038, L-$2.75, M-$2.20
B17.2-1967 (R1972) Woodruff Keys and Keyseats, Book No. J00037, L-$2.75, M-$2.20,
B18.1.1-1972 Small Solid Rivets, Book No. M00006, L-$3.50, M-$2.80
B18.1.2-1972 Large Rivets, Book No. K00023, L-$2.75, M-$2.20
B18.2.1-1972 Square and Hex Bolts and Screws, Book No. M00044, L-$4.50, N-$3.80
B18.2.2-1972 Square and Hex Nuts, Book No. M00043, L-$4.50, M-$3.80
B18.3-1969 Socket Cap, Shoulder and Set Screws, Book No. M00007, L-$5.00, M-$4.00
B18.5-1971 Round Head Bolts, Book No. L00032, L-$3.25, M-$2.60
B18.6.1-1972 Wood Screws, Book No. M0005, L-$4.00, M-$3.20
B18.6.2-1972 Slotted Head Cap Screws, Square Head Set Screws and Slotted Headless Set Screws, Book No. K00012, L-$4.00, M-$3.20
B18.6.3-1972 Machine Screws and Machine Screw Nuts, Book No. M00004, L-$9.50, M-$7.60
B18.6.4-1966 (R1975) Slotted and Recessed Head Tapping Screws and Metallic Drive Screws, Book No. N00021, L-$6.00, M-$4.80
B19.7-1972 General Purpose Semi-Tubular Rivets, Full Tubular Rivets, Split Rivets and Rivet Caps, Book No. N00059, L-$3.50, M-$2.80
B18.8.1-1972 Clevis Pins and Cotter Pins, Book No. L00021, L-$2.75, M-$2.20
B18.9-1958 (R1971) Plow Bolts, Book No. L00021, L-$2.75, M-$2.20
B18.10-1963 (R1975) Track Bolts and Nuts, Book No. M00025, L-$2.75, M-$2.20
B18.11-1961 (R1975) Miniature Screws, Book No. K00037, L-$2.75, M-$2.20
B18.12-1962 (R1975) Glossary of Terms for Mechanical Fasteners, Book No. M00046, L-$6.50, M-$5.20
B18.13-1965 (R1975) Screw and Washer Assemblies—Sems, Book No. N00043, L-$3.50, M-$2.80
B18.15-1969 Forged Eyebolts, Book No. M00037, L-$3.50, M-$2.80
B18.17-1968 (R1975) Wing Nuts, Thumb Screws and Wing Screws, Book No. J00005, L-$3.50, M-$2.80
B1821.1-1972 Lock Washers, Book No. L00002, L-$3.50, M-$2.80
B18.22.1-1965 (R 1975) Plain Washers (Redesignation of B27.2-1965), Book No. L00019, L-$2.75, M-$2.20
B18.23.1-1967 (R 1975) Beveled Washers (Redesignation of B27.4-1967), Book No. L00006, L-$2.25, M-$1.80

Transmission Chains, Washers, Conveyors & Compressors

B19.3-1972 Safety Standard for Compressors for Process Industries, Book No. B00003, L-$3.50, M-$2.80
B20.1-1976 Safety Standards for Conveyors and Related Equipment, Book No. B00005, L-$4.00, M-$3.20
B27.5-1969 General Purpose Rectangular Uniform Section Retaining Rings, Book No. L00023, L-$2.75, M-$2.20
B27.6-1972 General Purpose Uniform Cross Section Spiral Retaining Rings, Book No. L00037, L-$5.00, M-$4.00
B29.1-1975 Precision Power Transmission Roller Chains Attachments and Sprockets, Book No. M00050, L-$7.50, M-$6.00
B29.2-1957 (R 1971) Inverted Tooth (Silent) Chains and Sprocket Teath, Book No. M00002, L-$3.50, M-$2.80

B29.3-1954 (R 1974) Double-Pitch Power Transmission Roller Chains and Sprockets, Book No. K00075, L-$4.00, M-$3.20

B29.4-1972 Double-Pitch Conveyor Roller Chains, Attachments, and Sprockets, Book No. M00072, L-$4.25, M-$3.40

B29.6-1972 Steel Detachable Link Chains, Attachments and Sprockets, Book No. M00066, L-$5.50, M-$4.40

B29.7-1971 Malleable Iron Detachable Link Chain and Attachments, Book No. M00018, L-$4.50, M-$3.60

B29.8-1958 (R 1971) Leaf Chain, Book No. M00003, L-$3.50, M-$2.80

B29.9-1958 (R 1974) Small Pitch Silent Chains and Sprocket Tooth Form Less Than 3/8" Pitch, Book No. K00077, L-$2.75, M-$2.20

B29.10-1972 Heavy Duty Offset Sidebar Power Transmission Roller Chains and Sprocket Teeth, Book No. M00078, L-$5.00, M-$4.00

B29.11-1974 Combination Chains, Attachments and Sprocket Teeth, Book No. K00081, L-$5.50, M-$4.40

B29.12-1974 Steel Bushed Rollerless Chains, Attachments and Sprocket Teeth, Book No. K00030, L-$3.50, M-$2.80

B29.13-1972 700 Class Pintle Chains, Attachments and Sprocket Teeth, Book No. M00064, L-$3.50, M-$2.80

B29.14-1971 "H" Type Mill Chains—Attachments and Sprocket Teeth, Book No. M00062, L-$3.50, M-$2.80

B29.15-1973 Heavy Duty Roller Type Conveyor Chains and Sprocket Teeth, Book No. M00079, L-$3.50, M-$2.80

B29.16-1974 Welded Steel Type Mill Chains, Attachments, and Sprocket Teeth, Book No. K00079, L-$4.50, M-$3.60

B29.17-1974 Hinge Type Flat Top Conveyor Chains and Sprocket Teeth, Book No. K00078, L-$3.50, M-$2.80

B29.18-1974 Welded Steel-Type Drag Chains, Attachments, and Sprocket Teeth, Book No. K00080, L-$3.50, M-$2.80

B29.19-1976 A and CA550 and 620 Roller Chains, Attachments, and Sprockets, Book No. K00085, L-$4.50, M-$3.60

Cranes, Derricks, Hoists, Jacks & Slings

B30.1-1975 Jacks, Book No. B00007, L-$4.00, M-$3.20

B30.2.0-1976 Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder), Book No. B00011, L-$6.00, M-$4.80

B30.3-1975 Hammerhead Tower Cranes, Book No. J00033, L-$4.50, M-$3.60

B30.4-1973 Portal, Tower and Pillar Cranes, Book No. J00001, L-$4.50, M-$3.60

B30.5-1968 Crawler, Locomotive and Truck Cranes, Book No. B00012, L-$4.00, M-$3.20

B30.6-1969 Derricks, Book No. B00013, L-$3.25, M-$2.60

B30.7-1971 Base Mounted Drum Hoists, Book No. B00002, L-$3.50, M-$2.80

B30.8-1971 Floating Cranes and Floating Derricks, Book No. J00023, L-$4.50, M-$3.60

B30.9-1971 Slings, Book No. B00010, L-$5.00, M-$4.00

B30.10-1975 Hooks, Book No. J00048, L-$4.00, M-$3.20

B30.11-1973 Monorail Systems and Underhung Cranes, Book No. B00015, L-$4.00, M-$3.20

B30.12-1975 Handling Loads Suspended from Rotorcraft, Book No. J00047, L-$5.50, M-$4.40

B30.15-1973 Mobile Hydraulic Cranes, Book No. B00017, L-$5.50, M-$4.40

B30.16-1973 Overhead Hoists, Book No. B00001, L-$4.50, M-$3.60

Piping

Code for Pressure Piping, B31 Interpretations: All current cases, Book No. M00033, L-$13.00, M-$10.40. Three Year Subscription Service, L-$18.00, M-$14.40

Sets forth the conditions under which new materials may be used, the Committee's interpretations of code rules as they apply to specific construction problems of code users, and special provisions to cover conditions encountered in nuclear installations. Individual Cases (Book No. M00034) are available at $1.50, ASME members $1.20. Please specify individual Case number.

B31.1-1973 Power Piping (with Addenda up to the 1977 edition), Book No. A00058, L-$40.00, M-$32.00

B31.1-TR-116 Suggested Rules for Operation, Maintenance, Modification, Replacement and Repair of ANSI B31.1 Power Piping Systems - Draft, Book No. A00083, L-$3.50, M-$2.80

B31.2-1968 Fuel Gas Piping, Book No. A00036, L-$5.00, M-$4.00

B31.3-1973 Petroleum Refinery Piping, Book No. A00037, L-$20.00, M-$16.00

B31.3a-1975 Appendix E, Reference Standards, Book No. A00073, L-$1.25, M-$1.00

B31.3b-1974 Summer 1974 Addenda to Petroleum Refinery Piping B31.3-1973, Book No. A00075, L-$2.75, M-$2.20

B31.3c & d-1975 Addenda to Petroleum Refinery Piping, Book No. A00081, L-$6.00, M-$4.80

B31.4-1974 Liquid Petroleum Transportation Piping Systems (Including 1975 Addenda), Book No. A00038, L-$10.00, M-$8.00

B31.4a-1975 Referenced Standards Addenda, Book No. A00039, L-$1.25, M-$1.00

B31.5-1974 Refrigeration Piping, Book No. A00040, L-$9.50, M-$7.60

B31.7-1969 Nuclear Power Piping (Including 1971 and 1972 Addenda), Book No. A00042, L-$19.00, M-$15.20

B31.7a-1972 Addenda only, Book No. A00053, L-$1.25, M-$1.00

B31.7b-1971 Addenda only (Includes B31.7a-1971), Book No. A00043, L-$4.25, M-$3.40

B31.7c-1971 Addenda only, Book No. A00044, L-$4.25, M-$3.40

B31.8-1975 Gas Transmission and Distribution Piping Systems, Book No. A00045, L-$15.00, M-$12.00

ASME Guide for Gas Transmission and Distribution Piping Systems—1976 Including all Addenda through December 1978 (See page SR-11—ASME Standards), Book No. A00030, L-$100.00, M-$80.00; Binder for Gas Guide, Book No. A00028, L-$7.50, M-$6.00

Surface Texture, Pipe, Gages, and Industrial Trucks

B32.1-1952 (R 1972) Preferred Thickness for Uncoated, Thin, Flat Metals (Under 0.250 in.), Book No. L00025, L-$2.25, M-$1.80

B32.2-1969 (R 1974) Preferred Diameters for Round Wire—0.500 inches and under, Book No. M00012, L-$2.25, M-$1.80

B32.3-1974 Preferred Metric Thicknesses and Widths for Flat Metal Products, Book No. L00045, L-$3.00, M-$2.40

B32.4-1974 Preferred Metric Sizes for Round, Square and Hexagon Metal Products, Book No. L00046, L-$2.50, M-$2.00

B36.10-1975 Welded and Seamless Wrought Steel Pipe, Book No. M00031, L-$4.00, M-$3.20

B36.19-1965 (R 1971) Stainless Steel Pipe, Book No. M00013, L-$2.25, M-$1.80

B40.1-1974 Gauges: Pressure and Vacuum, Indicating Dial Type—Elastic Element, Book No. K00015, L-$5.00, M-$4.00

B46.1-1962 (R 1971) Surface Texture, Book No. M00019, L-$4.00, M-$3.20

B47.1-1974 Gage Blanks, Book No. M00082, L-$20.00, M-$16.00

B55.1-1961 Specifications for Multiple V-Belt Drives, Book No. M00042, L-$2.75, M-$2.20

B56.1-1975 Low Lift and High Lift Trucks, Book No. B00006, L-$6.50, M-$5.20

B73.1-1974 Specifications for Horizontal, End Suction Centrifugal Pumps for Chemical Process, Book No. J00019, L-$4.00, M-$3.20

B73.2-1975 Specifications for Vertical In-Line Centrifugal Pumps for Chemical Process, Book No. J00049, L-$4.50, M-$3.60

B88.1-1972 Guide for Dynamic Calibration of Pressure Transducers, Book No. L00042, L-$5.00, M-$4.00

B88.2-1974 Procedure for Bench Calibration of Tank Level Gaging Tapes and Sounding Rules, Book No. L00043, L-$2.75, M-$2.20

B89.1.9-1973 Precision Inch Gage Blanks for Length Measurement (Thru 20 inches), Book No. L00044, L-$5.00, M-$4.00

B89.3.1-1972 Measurement of Out-of-Roundness, Book No. L00020, L-$4.00, M-$3.20

B89.6.2-1973 Temperature and Humidity Environment for Dimensional Measurement, Book No. L00047, L-$6.50, M-$5.20

Cutting Tools, Holders, Drivers, Bushings and Punches

B94.1-1969 (R 1975) Blanks and Semi-Finished Blanks for Solid Carbide Taps, Book No. M00055, Book No. L-$2.75, M-$2.20

B94.2-1971 Reamers, Book No. L00028, L-$6.75, M-$5.40

B94.3-1965 (R1972) Straight Cut-Off Blades for Lathes and Screw Machines, Book No. M00056, L-$2.25, M-$1.80

B94.4-1965 (R 1972) Identification System for Throw-Away Inserts for Cutting Tools, Book No. M00057, L-$2.25, M-$1.80

B94.5-1974 Carbide Blanks and Single-Point Brazed Tools, Book No. N00018, L-$4.00, M-$3.20

B94.6-1966 (R 1972) Knurling, Book No. K00022, L-$2.75, M-$2.20

B94.7-1966 (R 1972) Hobs, Book No. N00056, L-$3.50, M-$2.80

B94.8-1967 (R 1972) Inserted Blade Milling Cutter Bodies, Book No. K00044, L-$2.25, M-$1.80

B94.9-1971 Taps—Cut and Ground Threads, Book No. K00043, L-$6.75, M-$5.40

B94.10-1967 (R 1972) High-Speed Steel and Cast Non-Ferrous Single-Point Tools and Tool Holders, Book No. N00034, L-$2.25, M-$1.80

B94.11-1967 (R 1972) Twist Drills, Book No. M00027, L-$4.00, M-$3.20

B94.12-1968 Carbide-Tipped Masonry Drills and Blanks for Carbide-Tipped Masonry Drills, Book No. L00013, L-$2.25, M-$1.80

B94.13-1976 Blanks for Carbide Burs, Book No. J00020, L-$4.50, M-$3.60

B94.14-1968 (R 1975) Punches—Basic Head Type, Book No. K00052, L-$2.75, M-$2.20

B94.16-1968 (R 1975) Retainers—Basic Ball-Lock, Punch and Die Button Light and Heavy Duty, Book No. K00054, L-$2.75, M-$2.20

B94.17-1968 (R 1975) Gages—Functional, Ball-Lock Punches, Die Buttons and Retainers, Book No. K00057, L-$2.75, M-$2.20

B94.18-1968 (R1975) Punches—Basic Ball-Lock Light and Heavy Duty, Book No. K00055, L-$3.50, M-$2.80

B94.19-1968 Milling Cutters and End Mills, Book No. L00008, L-$6.50, M-$5.20

B94.20-1968 Specifications for Carbide Blanks for Twist Drills, Reamers, End Mills, and Random Rod, Book No. K00056, L-$2.75, M-$2.20

B94.21-1968 (R 1974) Gear Shaper Cutters, Book No. J00007, L-$4.50, M-$3.60

B94.22-1968 (R 1975) Punches—Variable, Head Type, Book No. L00041, L-$4.25, M-$3.40

B94.23-1969 (R 1975) Punch Guide Bushings—Variable, Press Fit, Book No. L00040, L-$3.25, M-$2.60

B94.24-1969 Heavy Duty Carbide Inserts for Cutting Tools, Book No. L00034, L-$2.50, M-$2.00

B94.25-1975 Indexable Inserts for Cutting Tools, Book No. L00038, L-$14.50, M-$11.60

B94.26-1969 Indexable (Throw-away) Inserts Holders, Book No. L00039, L-$4.75, M-$3.80

B94.27-1970 (R 1976) Die Buttons—Basic Taper Relief, Press Fit, Book No. M00041, L-$3.75, M-$3.00

B94.28-1970 (R 1976) Die Buttons—Basic Straight Relief, Press Fit, Book No. M00045, L-$3.75, M-$3.00

B94.29-1970 (R 1976) Die Buttons—Basic Ball Lock, Book No. M00059, L-$3,75, M-$3.00

B94.30-1970 (R 1976) Die Buttons—Variable, Press Fit, Book No. M00060, L-$3.75, M-$3.00

B94.31-1969 (R 1976) Steel Rotary Slitting Knives and Steel Spacing Collars, Book No. K00061, L-$2.25, M-$1.80

B94.32-1954 (R 1971) Circular & Dove Tailed Forming Tool Blanks (Redesignation of B5.7-1954), Book No. J00025, L-$2.75, M-$2.20

B94.33-1974 Jig Bushings, Book No. K00021, L-$5.25, M-$4.20
B94.34-1946 (R 1971) Life Tests of Single Point Tools (Redesignation of B5.19-1946), Book No. L00001, L-$2.25, M-$1.80
B94.35-1972 Drill Drivers, Split-Sleeve, Collet Type, Book No. J00030, L-$2.75, M-$2.20
B94.36-1956 (R 1971) Life Tests for Single-Point Tools of Sintered Carbide (Redesignation of B5.34-1956), Book No. M00032, L-$2.25, M-$1.80
B94.37-1972 Carbide Blanks and Cutting Tools, Single-Point, Carbide-Tipped, Roller Turner Type, Book No. M00081, L-$3.50, M-$2.80
B94.38-1972 Punches—Variable, Angle Head Type and Related Quill Bushings, Book No. M00068, L-$3.50, M-$2.80
B94.39-1972 Punches—Basic, Combination Angle Head Type and Related Quill Bushings, Book No. M00069, L-$3.50, M-$2.80
B94.40-1972 Punches—Wire Type, Book No. M00070, L-$2.75, M-$2.20
B94.41-1972 Punches—Basic, Angle Head Type and Related Quill Bushings, Book No. M00071, L-$3.50, M-$2.80
B94.42-1972 Carbide Blanks for Tipping Circular Saws, Book No. M00077, L-$2.25, M-$1.80
B94.43-1972 Die Buttons—Variable, Press Fit, Headless and Head Type, Step Relief, Book No. M00075, L-$2.75, M-$2.20
B94.44-1972 Punches—Basic, Cylindrical Head Type and Related Quill Bushings, Book No. M00076, L-$3.50, M-$2.80
B94.45-1973 Precision Indexable Insert Holders (Includes B94.45a-1975), Book No. M00080, L-$16.00, M-$12.80
B94.45a-1975 Insert Radius Compensation Charts for Precision Indexable Insert Holders, Book No. M00083, L-$3.00, M-$2.40
B94.46-1973 Carbide Seats Used With Indexable Inserts for Clamp Type Holders, Book No. L00007, L-$4.50, M-$3.60
B94.47-1973 Carbide Chip Breakers Used With Indexable Inserts for Clamp Type Holders, Book No. L00029, L-$5.00, M-$4.00
B94.49-1975 Spade Drill Blades and Spade Drill Holders, Book No. L00035, L-$6.00, M-$4.80
B94.50-1975 Basic Nomenclature and Definitions for Single-Point Cutting Tools, Book No. M00084, L-$7.50, M-$6.00
B95.1-1972 Terminology for Pressure Relief Devices, Book No. M00063, L-$2.75, M-$2.20
B107.2-1975 Socket Wrenches Power Drive (Impact) (Inch Series), Book No. N00013, L-$4.50, M-$3.60
B107.4-1973 Driving and Spindle Ends for Portable Hand, Air, and Electric Tools, Book No. N00023, L-$6.75, M-$5.40

Automatic Control and Materials Handling

F2.1-1975 Food, Drug and Beverage Equipment, Book No. A00078, L-$4.00, M-$3.20
MC85.1-1963 Terminology for Automatic Control (With 1966 Supplement), Book No. N00036, L-$6.00, M-$4.80
MC85.1a-1966 Supplement only, Book No. N00052, L-$1.75, M-$1.40
MC85.1b-1972 Supplement only, Book No. N00037, L-$1.75, M-$1.40
MH1.1.2-1972 Pallet Definitions and Terminology, Book No. M00073, L-$3.50, M-$2.80
MH1.2.2-1975 Pallet Sizes, Book No. K00082, L-$3.50, M-$2.80
MH5.1-1971 Basic Requirements for Cargo Containers, Book No. K00070, L-$5.00, M-$4.00
MH5.1.1-1971 Requirements for Closed Van Containers, Book No. K00069, L-$3.50, M-$2.80
MH5.1.1a-1972 Addenda only, Book No. K00071, L-$.75, M-$.60
MH5.3-1970 Specifications for Identification and Marking of Cargo Containers, Book No. K00013, L-$2.75, M-$2.20
MH11.1-1973 Double Race or Bi-Level Swivel and Rigid Industrial Casters, Book No. K00051, L-$2.75, M-$2.20
MH11.3-1973 Load Handling Symbols for Powered Industrial Trucks, Book No. K00073, L-$2.75, M-$2.20
MH11.4-1973 Forks and Fork Carriers for Powered Industrial Forklift Trucks, Book No. K00074, L-$2.75, M-$2.20

Nuclear Safety

N45.2-1971 Quality Assurance Program Requirements for Nuclear Power Plants, Book No. A00052, L-$4.00, M-$3.20
N45.2.1-1973 Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants, Book No. A00056, L-$4.00, M-$3.20
N45.2.2-1972 Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (Under Construction Phase), Book No. A00054, L-$4.50, M-$3.60
N45.2.3-1973 Housekeeping During the Construction Phase of Nuclear Power Plants, Book No. A00057, L-$4.00, M-$3.20
N45.2.5-1974 Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants, Book No. A00077, L-$4.50, M-$3.60
N45.2.6-1973 Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants, Book No. A00055, L-$4.00, M-$3.20
N45.2.8-1975 Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants, Book No. A00079, L-$4.00, M-$3.20
N45.2.9-1974 Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants, Book No. A00076, L-$4.00, M-$3.20
N45.2.10-1973 Quality Assurance Terms and Definitions, Book No. A00069, L-$3.00, M-$2.40
N45.2.11-1974 Quality Assurance Requirements for the Design of Nuclear Power Plants, Book No. A00072, L-$5.50, M-$4.40
N45.2.13-1975 Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants, Book No. A00086 L-$5.00, M-$4.00
N278.1-1975 Self-Operated and Power-Operated Safety-Related Valves Functional Specification Standard, Book No. A00084, L-$3.00, M-$2.40
N510-1975 Testing of Nuclear Air-Cleaning Systems, Book No. A00082, L-$5.00, M-$4.00
N626.0-1974 Qualifications and Duties for Authorized Nuclear Inspection, Book No. J00061, L-$3.50, M-$2.80
N626.1-1975 Qualifications and Duties for Authorized Nuclear Inservice Inspection, Book No. J00062, L-$3.00, M-$2.40

Letter Symbols

Y1.1-1972 Abbreviations—For Use on Drawings and in Text, Book No. J00003, L-$12.00, M-$9.60
Y10.1-1972 Glossary of Terms Concerning Letter Symbols, Book No. K00003, L-$2.25, M-$1.80
Y10.2-1958 Letter Symbols for Hydraulics, Book No. K00029, L-$2.25, M-$1.80
Y10.3-1968 Letter Symbols for Quantities Used in Mechanics of Solids, Book No. K00016, L-$3.50, M-$2.80
Y10.4-1957 Letter Symbols for Heat and Thermodynamics, Book No. K00028, L-$2.25, M-$1.80
Y10.5-1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering, Book No. L00045, L-$4.00, M-$3.20
Y10.7-1954 Letter Symbols for Aeronautical Sciences, Book No. K00025, L-$3.50, M-$2.80
Y10.8-1962 Letter Symbols for Structural Analysis, Book No. K00034, L-$2.25, M-$1.80
Y10.10-1953 (R 1973) Letter Symbols for Meteorology, Book No. K00031, L-$2.25, M-$1.80
Y10.11-1953 (R 1959) Letter Symbols for Acoustics, Book No. K00024, L-$2.25, M-$1.80
Y10.12-1955 (R 1973) Letter Symbols for Chemical Engineering, Book No. K00026, L-$2.75, M-$2.20
Y10.14-1959 Letter Symbols for Rocket Propulsion, Book No. K00035, L-$3.50, M-$2.80
Y10.15-1958 (R 1973) Letter Symbols for Petroleum Reservoir Engineering and Electric Logging, Book No. N00019, L-$2.75, M-$2.20
Y10.16-1964 (R 1973) Letter Symbols for Shell Theory, Book No. M00049, L-$2.25, M-$1.80
Y10.17-1961 (R 1973) Guide for Selecting Greek Letters Used as Letter Symbols for Engineering Mathematics, Book No. K00039, L-$2.25, M-$1.80
Y10.18-1967 Letter Symbols for Illuminating Engineering, Book No. K00042, L-$2.25, M-$1.80
Y10.19-1969 Letter Symbols for Units Used in Science and Technology, Book No. K00053, L-$4.50, M-$3.60
Y10.20-1975 Mathematical Signs and Symbols for Use in Physical Sciences and Technology - Includes Y10.20a-1975 Supplement, Book No. K00084, L-$5.00, M-$4.00

Drafting Practices, Charts and Illustrations

Y14 Report Digital Representation of Physical Object Shapes, Book No. N00075, L-$4.00, M-$3.20
Y14.1-1975 Drawing Sheet Size and Format, Book No. N00001, L-$3.00, M-$2.40
Y14.2-1973 Line Conventions and Lettering, Book No. N00002, L-$4.00, M-$3.20
Y14.3-1975 Multi and Sectional View Drawings, Book No. N00003, L-$4.50, M-$3.60
Y14.4-1957 Pictorial Drawing, Book No. N00004, L-$3.00, M-$2.40
Y14.5-1973 Dimensioning and Tolerancing, Book No. N00005, L-$10.00, M-$8.00
Y14.6-1957 Screw Threads, Book No. N00006, L-$3.00, M-$2.40
Y14.7-1958 Gears, Splines and Serrations, Book No. N00007, L-3.00, M-$2.40
Y14.7.1-1971 Gear Drawing Standards—Part 1: for Spur Helical Double Helical and Rack, Book No. K00067, L-$3.50, M-$2.80
Y14.9-1958 Forgings, Book No. N00009, L-$3.00, M-$2.40
Y14.10-1959 Metal Stampings, Book No. N00010, L-$3.00, M-$2.40
Y14.11-1958 Plastics, Book No. N00011, L-$3.00, M-$2.40
Y14.14-1961 Mechanical Assemblies, Book No. N00014, L-$3.00, M-$2.40
Y14.15-1966 (R 1973) Electrical and Electronics Diagrams (With 1971 Supplement), Book No. N00015, L-$8.00, M-$6.40
Y14.15a-1971 Interconnection Diagrams, Book No. N00060, L-$1.75, M-$1.40
Y14.15b-1973 Information Sheet on Y14.15-1966 (R 1973), Book No. N00016, L-$1.25, M-$1.00
Y14.17-1966 (R 1974) Fluid Power Diagrams, Book No. N00017, L-$4.00, M-$3.20
Y14.26.3-1975 Dictionary of Terms for Computer-Aided Preparation of Product Definition Data (Including Engineering Drawings), Book No. N00012, L-$3.50, M-$2.80
Y14.32.1-1974 Chassis Frames—Passenger Car and Light Truck—Ground Vehicle Practices, Book No. N00008, L-$4.00, M-$3.20
Y15.1-1959 Illustrations for Publication and Projection, Book No. K00010, L-$2.75, M-$2.20
Y15.2-1960 Time Series Charts, Book No. M00023, L-$6.50, M-$5.20
T15.3-1974 ASME Standard 101. Operation and Flow Process Charts 1972, Book No. L00017, L-$4.00, M-$3.20

Graphic Symbols and Industrial Engineering Terminology

Y32.2-1975 Graphic Symbols for Electrical and Electronic Diagrams, Book No. K00041, L-$8.00, M-$6.40
Y32.4-1955 Graphical Symbols for Plumbing, Book No. K00007, L-$2.25, M-$1.80
Y32.7-1972 Graphic Symbols for Railroad Maps and Profiles, Book No. K00008, L-$4.50, M-$3.60
Y32.10-1967 (R 1974) Graphic Symbols for Fluid Power Diagrams, Book No. N00022, L-$4.00, M-$3.20
Y32.11-1961 Graphical Symbols for Process Flow Diagrams in Petroleum and Chemistry Industries, Book No. K00040, L-$2.25, M-$1.80
Y32.12-1960 (R 1973) Metalizing Symbols, Book No. K00036, L-$2.25, M-$1.80
Y32.18-1972 Symbols for Mechanical and Acoustical Elements as Used in Schematic Diagrams, Book No. K00011, L-$3.50, M-$2.80
Z32.2.3-1949 (R 1953) Graphical Symbols for Pipe Fittings, Valves, and Piping, Book No. K00006, L-$2.25, M-$1.80
Z32.2.4-1969 (R 1953) Graphical Symbols for Heating, Ventilating and Air Conditioning, Book No. K00005, L-$2.25, M-$1.80
Z32.2.6-1950 (R 1956) Graphical Symbols for Heat-Power Apparatus, Book No. K00004, L-$2.25, M-$1.80
Z94.1-1972 Biomechanics, Book No. N00061, L-$4.00, M-$3.20
Z94.2-1972 Cost Engineering, Book No. N00062, L-$2.75, M-$2.20
Z94.3-1972 Data Processing and Systems Design, Book No. N00063, L-$5.00, M-$4.00
Z94.4-1972 Distribution and Marketing, Book No. N00064, L-$2.75, M-$2.20
Z94.5-1972 Engineering Economy, Book No. N00065, L-$3.50, M-$2.80
Z94.6-1972 Facility Planning, Book No. N00066, L-$5.00, M-$4.00
Z94.7-1972 Materials Processing, Book No. N00067, L-$9.00, M-$7.20
Z94.8-1972 Applied Mathematics, Book No. N00068, L-$9.00, M-$7.20
Z94.9-1972 Organization Planning and Theory, Book No. N00069, L-$2.75, M-$2.20
Z94.10-1972 Production Planning and Control, Book No. N00070, L-$4.00, M-$3.20
Z94.11-1972 Applied Psychology, Book No. N00071, L-$5.00, M-$4.00
Z94.12-1972 Work Measurements and Methods, Book No. N00072, L-$3.50, M-$2.80
1972 Index To Z94 Industrial Engineering Terminology, Book No. N00073, L-$11.00, M-$8.80
Z223.1-1974 National Fuel Gas Code, Book No. N00074, L-$3.00, M-$2.40

1974 ASME Boiler and Pressure Vessel Code

Available in both Bound (see book numbers beginning with T) and Loose-Leaf (see book numbers beginning with U) editions. Prices include automatic addenda service up to the 1977 edition.

Section I Power Boilers, Book No. T00010, L-$35.00, M-$28.00; Book No. U00010, L-$55.00, M-$44.00

Section II Material Specifications
Ferrous Materials—Part A, Book No. T0002A, L-$80.00, M-$64.00; Book No. U0002A, L-$90.00, M-$72.00
Nonferrous Materials - Part B, Book No. T0002B, L-$65.00, M-$52.00; Book No. U0002B, L-$75.00, M-$60.00
Welding Rods, Electrodes and Filler Metals - Part C, Book No. T0002C, L-$25.00, M-$20.00; Book No. U0002C, L-$30.00, M-$24.00

Section III Division 1-Nuclear Power Plant Components
Subsection NA-General Requirements (Includes all Appendices), Book No. T0003A, L-$70.00, M-$56.00
Book No. U0003A, L-$105.00, M-$84.00
Subsection NB-Class 1 Components, Book No. T0003B, L-$45.00 M-$36.00; Book No. U0003B, L-$75.00, M-$60.00
Subsection NC-Class 2 Components, Book No. T0003C, L-$45.00, M-$36.00; Book No. U0003C, L-$75.00, M-$60.00
Subsection ND-Class 3 Components, Book No. T0003D, L-$45.00, M-$36.00; Book No. U0003D, L-$75.00, M-$60.00
Subsection NE-Class MC Components, Book No. T0003E, L-$45.00, M-$36.00; Book No. U0003E, L-$75.00, M-$60.00
Subsection NF-Component Supports, Book No. T0003F, L-$25.00, M-$20.00; Book No. U0003F, L-$35.00, M-$28.00
Subsection NG-Core Support Structures, Book No. T0003G, L-$30.00, M-$24.00; Book No. U0003G, L-$40.00, M-$32.00

Section III Division 2-Code for Concrete Reactor Vessels and Containments, Book No. T00032, L-$50.00, M-$40.00; Book No. U00032, L-$100.00, M-$80.00

Section IV Heating Boilers, Book No. T00040, L-$40.00, M-$32.00; Book No. U00040, L-$50.00, M-$40.00

Section V Nondestructive Examination, Book No. T00050, L-$40.00, M-$32.00; Book No. U00050, L-$50.00, M-$40.00

Section VI Recommended for Care and Operation of Heating Boilers, Book No. T00060, L-$20.00, M-$16.00; Book No. U00060, L-$25.00, M-$20.00

Section VII Recommended Rules for Care of Power Boilers, Book No. T00070, L-$20.00, M-$16.00; Book No. U00070, L-$25.00, M-$20.00

Section VIII Pressure Vessels
Division 1, Book No. T00081, L-$50.00, M-$40.00; Book No. U00081, L-$75.00, M-$60.00
Division 2-Alternative Rules, Book No. T00082, L-$50.00, M-$40.00; Book No. U00082, L-$75.00, M-$60.00

Section IX Welding and Brazing Qualifications, Book No. T00090, L-$35.00, M-$28.00; Book No. U00090, L-$45.00, M-$36.00

Section X Fiberglass-Reinforced Plastic Pressure Vessels, Book No. T00100, L-$30.00, M-$24.00; Book No. U00100, L-$45.00, M-$36.00

Section XI Rules for Inservice Inspection of Nuclear Power Plant Components Book No. T00110, L-$40.00, M-$32.00; Book No. U00110, L-$70.00, M-$56.00

CODE CASE BOOK (Loose-Leaf Edition Only), Book No. U00120, L-$100.00, M-$80.00
Complete Code (Special Offer for All of the Above), Book No. T00230, L-$900.00, M-$720.00; Book No. U00230, L-$1250.00, M-$1000.00
Binder for Loose-Leaf Edition (2-inch capacity), Book No. U00140, L-$12.00, M-$9.00

Data Report Forms

Data Report Forms, samples of which are shown in the various Sections of the ASME Boiler and Pressure Vessel Code, may be obtained from the ASME Order Department in pads of 100 sheets each at a cost of $6.00 per pad. Please order by Book Number which follows each title. No member discount.

A1 Manufacturers' Data Report for Pressure Vessels (**E00112**)
A-1A Manufacturers' Data Report for Pressure Vessels (Alternate Form for Single Chamber Completely Shop-Fabricated Vessels Only) (**E00113**)
A-2 Manufacturers' Partial Data Report (A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer) (**E00114**)
A-3 Manufacturers' Data Report Supplementary Sheet (**E00119**)
C-1 Constructors' Data Report for Concrete Reactor Vessels and Containments (**E00077**)
C-2 Fabricators' Data Report for Parts of Concrete Reactor Vessels and Containments as Required by the Provisions of the ASME Code, Section III, Division 2 (**E00081**)
H-2 Manufacturers' Data Report for All Types of Boilers Except Water-Tube and Those Made of Cast Iron (**E00101**)
H-3 Manufacturers' Data Report for Water-Tube Boilers (**E00102**)
H-4 Manufacturers' Partial Data Report (**E00103**)
H-5 Manufacturers' Master Data Report for Boilers Constructed from Cast Iron (**E00041**)
HLW-6 Manufacturers' Report for Lined Water Heaters (**E00105**)
HLW-7 Manufacturers' Partial Data Report for Lined Water Heaters (**E00106**)
HLW-8 Manufacturers' Master Data Proof Test Report for Lined Water Heaters (**E00107**)
N-1 Manufacturers' Data Report for Nuclear Vessels (**E00038**)
N-1A Manufacturers' Data Report for Nuclear Vessels (Alternate Form for Single Chamber Completely Shop-Fabricated Vessels Only) (**E00039**)
N-2 Manufacturers' Data Report for Nuclear Part and Appurtenances (**E00040**)
N-3 Owners' Data Report for Nuclear Power Plant Components (**E00024**)
N-5 Data Report for Field Installation of Nuclear Power Plant Components, Component Supports, and Appurtenances (**E00025**)
N-6 Manufacturers' Data Report for Storage Tanks (**E00054**)
N-7 Manufacturers' Data Report for Storage Tank Parts and Appurtenances (**E00055**)
NCS-1 Designers' Data Report for Core Support Structures-Fabricated by Others (**E00065**)
NCS-1A Fabricators' Data Report for Core Support Structures-Designed by Others (**E00066**)
NCS-2 Manufacturers' Data Report for Core Support Structures (**E00067**)
NCS-3 Manufacturers' Data Report for Core Support Structures, as Required by the Provisions of ASME Code Section III, Division 1 (**E00078**)
NCS-4 Fabricators' Data Report for Core Support Structures and Related Parts for Appurtenances Designed by Others, as Required by the Provisions of ASME Code, Section III, Division 1 (Alternative to Form NCS-1A) (**E00079**)
NF-1 Manufacturers' Data Report for Component Supports (**E00075**)
NF-2 Manufacturers' Partial Data Report for Parts for Component Support (**E00076**)
NIS-1 Owners' Data Report for Inservice Inspection (**E00029**)
NM-1 Data Report for Tubular Products and Fittings Welded with Filler Metal (**E00080**)
NPP-1 Fabricated Nuclear Piping (**E00062**)
NPV-1 Manufacturers' Data Report for Nuclear Pumps or Valves (**E00037**)
NR-1 Manufacturers' Data Report of Rupture Discs (**E00026**)
NV-1 Manufacturers' Data Report for Safety and Safety Relief Valves (**E00042**)
P-2 Manufacturers' Data Report for All Types of Boilers Except Water Tube (**E00068**)
P-2A Manufacturers' Data Report for All Types Electric Boilers (**E00120**)
P-3 Manufacturers' Data Report for Water-tube Boilers, Super-heaters, Waterwalls, and Economizers (**E00069**)
P-3A Engineering - Contractor Data Report for a Complete Boiler Unit (**E00070**)
P-4 Manufacturers' Partial Data Report (**E00071**)
P-4A Manufacturers' Data Report for Fabricated Piping (**E00072**)
P-5 Summary Data Report for Process Steam Generators (**E00073**)
P-6 Manufacturers' Data Report Supplementary Sheet (**E00074**)

QB-482 Recommended Form-Procedure Specification Applying to Ferrous and Nonferrous Materials and All Brazing Processes (**E00031**)
QB-483 Recommended Form-Manufacturers' Record of Brazing Procedure Qualification Tests (**E00032**)
QB-484 Recommended Form-Performance Specification and Manufacturers' Record of Brazer Qualification Test (**E00033**)
QW-482 Welding Procedure Specification (WPS) (**E00006**)
QW-483 Procedure Qualification Record (PQR) (**E00007**)
QW-484 Manufacturers' Record of Welder or Welding Operator Qualification Tests (**E00008**)
RP-1 Manufacturers' Data Report for Fiberglass-Reinforced Plastic Pressure Vessels (**E00115**)
RP-2 Manufacturers' Partial Data Report (**E00116**)
U-1 Manufacturers' Data Report for Pressure Vessels (**E00108**)
U-1A Manufacturers' Data Report for Pressure Vessels (Alternate Form for Single Chamber Completely Shop-Fabricated Vessels Only) (**E00117**)
U-2 Manufacturers' Partial Data Report (A Part of a Pressure Vessel Fabricated by One Manufacturer for Another) (**E00110**)
U-3 Manufacturers' Certificate of Compliance Covering Pressure Vessels to be Stamped with the UM-Symbol (**E00111**)
U-4 Manufacturers' Data Report Supplementary Sheet (**E00118**)

Other Titles of Interest to Boiler and Pressure Vessel Code Users

Companies Holding Certificates of Authorization for Use of Code Symbol Stamps — 1976 Edition, (With Winter 1976 Supplement), Book No. E00052, L-$35.00, M-$28.00
Companies Holding Nuclear Certificates of Authorization (One Year Subscription-Issued bimonthly), Book No. E00061, L-$45.00, M-$36.00
Criteria for Design of Elevated Temperature Class 1 Components in Section III, Division 1, of the ASME Boiler and Pressure Vessel Code, 1976, Book No. E00097, L-$20.00, M-$16.00
Criteria of the ASME Boiler & Pressure Vessel Code for Design by Analysis Sections III & VIII, Div. 2, 1969, Book No. I00059, L-$1.50, M-$1.20
History of the ASME Boiler Code, 1955, Book No. G00028, L-$10.00, M-$8.00
Proposed Standard for Acoustic Emission Examinations During Application of Pressure, 1975, Book No. E00096, L-$2.50, M-$2.00
Sample Analysis of a Piping System: Class 1 Nuclear, 1972, Book No. E00063, L-$4.50, M-$3.60

ASME CODES

Performance Test Codes

Test methods prescribed in the PTC's enable users to obtain accurate information on adaptability of equipment, best methods of operation, capacity and efficiency, and verification of manufacturer's guarantees. Each one contains a check list of items on which agreement should be reached before starting tests, specifies the instruments and testing apparatus needed, lists precautions, gives instructions for computing and tabulating results and shows how to correct results for deviations from specified test conditions.

The Performance Test Codes Committee is following a policy of submitting the PTC Documents to ANSI for approval as American National Standards. The documents that have been approved bear the ANSI/ASME designation. This PTC/ANSI relationship will reduce duplication of effort and promote the consensus standards concept.

ANSI	ASME	
PTC 1-1974	PTC 1-1970	General Instructions (With 1971 Addenda), Book No. C00017, L-$5.00, M-$4.00
PTC 2-1974	PTC 2-1971	Code on Definitions and Values, Book No. C00007, L-$5.50, M-$4.40
PTC 3.1-1974	PTC 3.1-1958	(R 1970) Diesel and Burner Fuels, Book No. D00024, L-$10.00, M-$8.00
PTC 3.2-1974	PTC 3.2-1954	(R 1970) Solid Fuels, Book No. C00023, L-$5.50, M-$4.40
PTC 3.3-1974	PTC 3.3-1969	Gaseous Fuels, Book No. D00038, L-$9.00, M-$7.20
PTC 4.1-1974	PTC 4.1-1964	(R 1973) Steam-Generating Units (With 1968 and 1969 Addenda), Book No. C00025, L-$10.00, M-$8.00
		Diagram for Testing of a Steam Generator, Figure 1 (Pad of 100), Book No. C00038, L-$6.00, M-$6.00
		Heat Balance of a Steam Generator, Figure 2 (Pad of 100), Book No. C00039, L-$6.00, M-$6.00
	PTC 4.1a-1964	ASME Test Form for Abbreviated Efficiency Test—Summary Sheet (Pad of 100), Book No. C00036, L-$6.00, M-$6.00
	PTC 4.1b-1964	(R 1965) ASME Test Form for Abbreviated Efficiency Test—Calculation Sheet (Pad of 100), Book No. C00037, L-$6.00, M-$6.00
PTC 4.2-1974	PTC 4.2-1969	Coal Pulverizers, Book No. C00006, L-$4.50, M-$3.60
PTC 4.3-1974	PTC 4.3-1968	Air Heaters, Book No. D00034, L-$7.00, M-$5.60
	PTC 5-1949	Reciprocating Steam Engines, Book No. C00022, L-$2.75, M-$2.20
PTC 6-1976	PTC 6-1976	Steam Turbines, Book No. C00028, L-$15.00, M-$12.00
Appendix to ANSI PTC 6-1974	PTC 6A-1964	(R 1973) Appendix A to Test Code for Steam Turbines (With 1968 Addenda), Book No. C00029, L-$6.50, M-$5.20
PTC 6 Report-1974	PTC 6 Report-1969	(R 1973) Guidance for Evaluation of Measurement Uncertainty in Performance Tests of Steam Turbines, Book No. D00041, L-$5.00, M-$4.00
PTC 6S Report-1974	PTC 6S Report-1970	(R 1973) Simplified Procedures for Routine Performance Tests of Steam Turbines, Book No. D00042, L-$11.00, M-$8.80
	PTC 7-1949	(R 1969) Reciprocating Steam-Driven Displacement Pumps, Book No. C00021, L-$2.50, M-$2.00
	PTC 7.1-1962	(R 1969) Displacement Pumps, Book No. D00026, L-$4.00, M-$3.20
	PTC 8.2-1965	Centrifugal Pumps (With 1973 Addenda), Book No. C00005, L-$5.00, M-$4.00
	1973 Addendum to PTC 8.2-1965	Centrifugal Pumps, Book No. C00002, L-$1.25, M-$1.00
PTC 9-1974	PTC 9-1970	Displacement Compressors, Vacuum Pumps and Blowers (With 1972 Errata, Book No. C00009, L-$8.00, M-$6.40
PTC 10-1974	PTC 10-1965	(R 1973) Compressors and Exhausters, Book No. C00004, L-$8.00, M-$6.40
PTC 12.1-1975	PTC 12.1-1955	(R 1975) Feedwater Heaters, Book No. C00013, L-$6.00, M-$4.80
PTC 12.2-1975	PTC 12.2-1955	(R 1975) Steam Condensing Apparatus, Book No. C00026, L-$8.00, M-$6.40
	PTC 12.3-1958	Deaerators, Book No. D00023, L-$6.00, M-$4.80
PTC 14-1974	PTC 14-1970	Evaporating Apparatus, Book No. C00011, L-$5.00, M-$4.00
PTC 16-1974	PTC 16-1958	(R1971) Gas Producers and Continuous Gas Generators, Book No. C00014, L-$5.50, M-$4.40
PTC 17-1974	PTC 17-1973	Reciprocating Internal-Combustion Engines, Book No. C00020, L-$7.50, M-$6.00
	PTC 18-1949	Hydraulic Prime Movers, Book No. C00018, L-$5.00, M-$4.00
	PTC 20.1-1958	Speed-Governing Systems for Steam Turbine-Generator Units, Book No. C00019, L-$5.00, M-$4.00
	PTC 20.2-1965	Overspeed Trip Systems for Steam Turbine-Generator Units, Book No. C00041, L-$5.00, M-$4.00
PTC 20.3-1974	PTC 20.3-1970	Pressure Control Systems Used on Steam Turbine Generator Units, Book No. C00027, L-$9.00, M-$720
	PTC 21-1941	Dust Separating Apparatus, Book No. D00021, L-$4.00, M-$3.20
PTC 22-1974	PTC 22-1966	(R 1973) Gas Turbine Power Plants, Book No. C00015, L-$8.00, M-$6.40
	PTC 23-1958	Atmospheric Water Cooling Equipment, Book No. D00022, L-$6.00, M-$4.80
PTC 24-1976	PTC 24-1976	Ejectors, Book No. C00010, L-$7.50, M-$6.00
PTC 25.3-1976	PTC 25.3-1976	Safety and Relief Valves, Book No. D00031, L-$12.00, M-$9.60
	PTC 26-1962	Speed Governing Systems for Internal Combustion Engine-Generator Units, Book No. D00027, L-$4.00, M-$3.20
	PTC 27-1957	Determining Dust Concentration in a Gas Stream, Book No. C00008, L-$5.00, M-$4.00
PTC 28-1974	PTC 28-1965	(R 1973) Determining the Properties of Fine Particulate Matter, Book No. D00030, L-$6.00, M-$4.80
	PTC 29-1965	Speed-Governing Systems for Hydraulic Turbine-Generator Units, Book No. C00040, L-$5.75, M-$4.60
PTC 31-1974	PTC 31-1973	Ion Exchange Equipment, Book No. C00016, L-$6.00, M-$4.80

PTC 32.1-1974	PTC 32.1-1969	Nuclear Steam Supply Systems, Book No. C00012, L-$6.50, M-$5.20
	PTC 34 Draft	Draft ASME Code for In-Service Testing of Valves in Nuclear Power Plants, Book No. C000-43, L-$4.50, M-$3.60
	PTC 35 Draft (April 1970)	Draft ASME Code for In-Service Testing of Pumps in Nuclear Power Plants, Book No. C00042, L-$2.75, M-$2.20

PTC Supplements on Instruments and Apparatus

ANSI	ASME	
	PTC 19.2-1964	Pressure Measurement, Book No. D00029, L-$9.00, M-$7.20
PTC 19.3-1974	PTC 19.3-1974	Temperature Measurement, Book No. C00035, L-$16.00, M-$12.80
	PTC 19.5-1972	Application, Part II of Fluid Meters: Interim Supplement on Instruments and Apparatus, Book No. G00018, L-$14.00, M-$11.20
	PTC 19.5.1-1964	Weighing Scales, Book No. D00028, L-$3.75, M-$3.00
	PTC 19.6-1955	Electrical Measurements in Power Circuits, Book No. D00007, L-$7.00, M-$5.60
	PTC 19.7-1961	Measurement of Shaft Horsepower, Book No. D00009, L-$5.00, M-$4.00
PTC 19.8-1974	PTC 19.8-1970	Measurement of Indicated Horsepower, Book No. D00008, L-$5.50, M-$4.40
PTC 19.10-1974	PTC 19.10-1968	Flue and Exhaust Gas Analyses, Book No. C00031, L-$5.50, M-$4.40
PTC 19.11-1974	PTC 19.11-1970	Water and Steam in the Power Cycle (Purity and Quality, Leak Detection and Measurement), Book No. D00011, L-$9.00, M-$7.20
	PTC 19.12-1958	Measurement of Time, Book No. D00012, L-$2.75, M-$2.20
	PTC 19.13-1961	Measurement of Rotary Speed, Book No. D00013, L-$4.00, M-$3.20
	PTC 19.14-1958	Linear Measurements, Book No. D00014, L-$3.50, M-$2.80
	PTC 19.16-1965	Density Determinations of Solids and Liquids, Book No. D00016, L-$3.75, M-$3.00
	PTC 19.17-1965	Determination of the Viscosity of Liquids, Book No. D00017, L-$4.00, M-$3.20
	(Not a PTC)	The Philosophy of Power Test Codes and Their Development, Book No. I00056, L-$2.50, M-$2.00
		Binders for Performance Test Codes —Blue cloth, 8-1/2 × 11 with rods, Book No. C00003, L-$7.50, M-$6.00

ASME Standards

APS-1 Recommended Guide for the Control of Dust Emissions—Combustion for Indirect Heat Exchangers 1968, Book No. N00055, L-$2.75, M-$2.20

—— Discussion on ASME Standard APS-1, 1967, Book No. G00049, L-$2.75, M-$2.20

APS-2 Recommended Guide for the Control of Oxides of Sulfur (With Supplement) 1970, Book No. N00051, L-$3.50, M-$2.80

—— Supplement only, Book No. N00054, L-$1.25, M-$1.00

No. 101 Operation and Flow Process Charts 1972, Book No. L00017, L-$4.00, M-$3.20

No. 102 Form for Use in Self-Appraisal of Industrial Plants 1947, Book No. M00001, L-$2.75, M-$2.20

No. 104 One-Piece Metallic Piston Rings 1954, Book No. L00016, L-$2.25, M-$1.80

No. 111 Recommended Practices for the Design of Marine Propulsion Turbine Lubricating Systems 1960, Book No. J00036, L-$2.25, M-$1.80

No. 112 Diaphragm Actuated Control Valve Terminology 1961, Book No. L00036, L-$2.25, M-$1.80

No. 113 Recommended Practices for the Flushing and Cleaning of Marine Propulsion Turbine Lubricating Systems 1964, Book No. M00051, L-$2.25, M-$1.80

No. 114 Recommended Practices for the Purification of Marine Propulsion Turbine Lubricating Oil 1964, Book No. M00052, L-$2.25, M-$1.80

No. 115 Recommended Practices for the Design, Operation and Maintenance of Marine Auxiliary Machinery Lubricating Systems 1968 (Includes ASME Standards No. 115A (Design Section only) Recommended Practices for the Design of Steam Turbine Driven Generator Lubricating Systems; 115B Recommended Practices for the Design of Marine Steam Turbine Driven Boiler Feed Pumps Lubricating Systems; 115C Recommended Practices for the Design of Marine Steam Turbine Driven Blowers Lubricating Systems,), Book No. K00046, L-$4.00, M-$3.20

No. 115D Recommended Practices or the Design of Lubricating Systems for Marine Steam Turbine Pumps for Various Ships Services 1969, Book No. K00059, L-$2.75, M-$2.20

No. 116 Recommended Practices for the Design of Steam Turbine Generator Oil Systems 1968, Book No. K00047, L-$2.75, M-$2.20

No. 117 Recommended Practices for the Cleaning of Steam Turbine Generator Oil Systems 1968, Book No. K00048, L-$2.75, M-$2.20

No. 118 Recommended Practices for the Purification of Steam Turbine Generator Oil 1968, Book No. K00049, L-$2.75, M-$2.20

No. 119 Recommended Practices for the Flushing and Cleaning of Marine Auxiliary Machinery Lubricating Systems 1968, Book No. K00050, L-$2.75, M-$2.20

No. 120 Recommended Practices for the Design of Gas Turbine Generator Lubricating Oil Systems 1969, Book No. K00058, L-$2.75, M-$2.20

No. 121 Recommended Practices for the Purification of Lubricating Oil in Marine Steam Turbine Driven Auxiliary Machinery 1969, Book No. K00060, L-$2.75, M-$2.20

LOS-2C1 ASTM-ASME Recommended Practices for the Flushing and Cleaning of Lubricating Systems of Various Turbine Driven Pumps for Marine Service, Book No. K00062, L-$3.50, M-$2.80

LOS-4C1 ASTM-ASME Recommended Practices for Flushing and Cleaning of Gas Turbine Generator Lubricating Oil Systems, Book No. K00063, L-$3.50, M-$2.80

LOS-5C1 ASTM-ASME Recommended Practices for the Flushing and Cleaning of Oil Systems for Lubrication and Control of Hydroelectric Equipment, Book No. K00065, L-$3.50, M-$2.80

LOS-5D1 ASTM-ASME Recommended Practices for the Design of Oil Systems for Lubrication and Control of Hydroelectric Equipment, Book No. K00068, L-$3.50, M-$2.80

LOS-5P1 ASTM-ASME Recommended Practice for the Purification of Oil Systems for Lubrication and Control of Hydroelectric Equipment, Book No. K00064, L-$3.50, M-$2.80

TWDPS-1 Recommended Practices for the Prevention of Water Damage to Steam Turbines Used for Electric Power Generation: Part I—Fossil Fueled Plants 1972, Book No. K00066, L-$4.00, M-$3.20

TWDPS-1 Recommended Practices for the Prevention of Water Damage to Steam Turbines Used for Electric Power Generation: Part II—Nuclear Fueled Plants 1973, Book No. K00072, L-$4.00, M-$3.20

—— Draft ASME Code for Pumps and Valves for Nuclear Power 1968 (With 1970 Addenda), Book No. N00047, L-$5.50, M-$4.40
Addenda only, Book No. N00050, L-$2.25, M-$1.80

—— ASME Guide for Gas Transmission and Distribution Piping Systems—1976 (Including all Addenda through December 1978), Book No. A00030, L-$100.00, M-$80.00

—— Binder for Gas Guide, Book No. A00028, L-$7.50, M-$6.00

BOOKS AND REPORTS

Aerospace

Annals of Reliability and Maintainability, 1971, Book No. H00025, L-$25.00, M-$12.50

Integrated Design and Analysis of Aerospace Structures, 1975, Book No. G00096, L-$12.00, M-$6.00

Measurement and Prediction of Structural and Biodynamic Crash-Impact Response, 1976, Book No. G00107, L-$20.00, M-$10.00

Reliability and Maintainability (Reprinted from Mechanical Engineering), 1966, Book No. H00054, L-$2.00, M-$1.00

1968 Reliability and Maintainability Conference Proceedings—"Annals of Assurance Sciences," 1968, Book No. I00053, L-$27.00, M-$13.50

Space Systems and Thermal Technology for the 70's; Aviation & Space Papers—Part I, 1970, Book No. I00073, L-$45.00, M-$22.50; Heat Transfer Papers —Part II, 1970, Book No. I00074, L-$$45.00, M-$22.50

Structural Dynamic Aspects of Bladed-Disk Assemblies, 1976, Book No. H00098, L-$14.00, M-$7.00

Air Pollution

Ambient Air Quality Standards—Here We Are, What Do We Do? 1976, Book No. I00099, L-$30.00, M-$15.00

Cooling Tower Plume Modeling and Drift Measurement—A Review of the State-of-the-Art, 1975, Book No. H00088, L-$25.00, M-$12.50

Recommended Guide for the Prediction of the Dispersion of Airborne Effluents —Second Edition, 1973, Book No. H00037, L-$6.00, M-$3.00

Applied Mechanics

Isolation of Mechanical Vibration, Impact and Noise—AMD-Vol. 1, 1973, Book No. G00047, L-$25.00, M-$12.50

Biomechanics Symposium—AMD-Vol. 2, 1973, Book No. G00033, L-$12.00, M-$6.00

Rock Mechanics Symposium—AMD-Vol. 3, 1973, Book No. I00012, L-$12.50, M-$6.25

Mechanics and Sport—AMD-Vol. 4, 1973, Book No. H00007, L-$25.00, M-$12.50

Surveys of Research in Transportation Technology—AMD-Vol. 5, 1973, Book No. H00006, L-$18.00, M-$9.00

Numerical Solutions of Nonlinear Problems—AMD-Vol. 6, 1973, Book No. H00036, L-$20.00, M-$10.00

Structural Optimization Symposium—AMD-Vol. 7, 1974, Book No. I00042, L-$18.00, M-$9.00

Applied Mechanics in Earthquake Engineering—AMD-Vol. 8, 1974, Book No. I00020, L-$22.00, M-$11.00

Reliability Design for Vibroacoustic Environments—AMD-Vol. 9, 1974, Book No. I00047, L-$18.00, M-$9.00
1975 Biomechanics Symposium—AMD-Vol. 10, 1975, Book No. I00090, L-$16.00, M-$8.00
Boundary-Integral Equation Method: Computational Applications in Applied Mechanics—AMD-Vol. 11, 1975, Book No. I00089, L-$14.00, M-$7.00
Vibration Testing—Instrumentation and Data Analysis—AMD-Vol. 12, 1975, Book No. I00091, L-$14.00, M-$7.00
Inelastic Behavior of Composite Materials—AMD-Vol. 13, 1975, Book No. I00093, L-$20.00, M-$10.00
Finite Element Analysis of Transient Nonlinear Structural Behavior—AMD-Vol. 14, 1975, Book No. I00094, L-$20.00, M-$10.00
Mechanics of Transportation Suspension Systems—AMD-Vol. 15, 1975, Book No. I00095, L-$12.00, M-$6.00
Effects of Voids on Material Deformation—AMD-Vol. 16, 1976, Book No. I00101, L-$20.00, M-$10.00
Propagation of Shock Waves in Solids—AMD-Vol. 17, 1976, Book No. I00102, L-$16.00, M-$8.00
Computing in Applied Mechanics—AMD-Vol. 18, 1976, Book No. I00108, L-$20.00, M-$10.00
Mechanics of Fracture—AMD-Vol. 19, 1976, Book No. I00105, L-$20.00, M-$10.00
Constitutive Equations in Viscoplasticity: Computational and Engineering Aspects—AMD-Vol. 20, 1976, Book No. I00106, L-$20.00, M-$10.00
Constitutive Equations in Viscoplasticity: Phenomenological and Physical Aspects—AMD-Vol. 21, 1976, Book No. I00107, L-$14.00, M-$7.00
Applications of Holography in Mechanics, 1971, Book No. H00040, L-$7.50, M-$3.75
Applied Mechanics Aspects of Nuclear Effects in Materials, 1971, Book No. H00073, L-$20.00, M-$10.00
Computational Approaches in Applied Mechanics, 1969, Book No. I00067, L-$19.50, M-$9.75
Dynamic Response of Biomechanical Systems, 1970, Book No. G00075, L-$15.00, M-$7.50
Dynamics of Composite Materials, 1972, Book No. H00078, L-$12.00, M-$6.00
Dynamics of Structured Solids, 1968, Book No. H00004, L-$7.00, M-$3.50
Experimental Techniques in Shock and Vibrations, 1962, Book No. G00002, L-$9.00, M-$4.50
Fluid-Solid Interaction, 1967, Book No. G00059, L-$13.50, M-$6.75
Mathematical Theory of Dislocations, 1969, Book No. I00036, L-$16.50, M-$8.25
Proceedings of the U.S. National Congress of Applied Mechanics
7th—1974, Book No. G00085, L-$25.00, M-$12.50
6th—1970, Book No. G00078, L-$12.50, M-$6.25
4th—1962, Book No. H00024, L-$44.00, M-$22.00
Surface Crack: Physical Problems and Computational Solutions, 1972, Book No. H00029, L-$20.00, M-$10.00
Surface Mechanics, 1969, Book No. G00013, L-$13.00, M-$6.50
Synthesis of Vibrating Systems, 1971, Book No. H00072, L-$15.00, M-$7.50
System Identification of Vibrating Structures: Mathematical Models from Test Data, 1972, Book No. I00005, L-$20.00, M-$10.00
Use of Models and Scaling in Shock and Vibration, 1963, Book No. I00010, L-$7.00, M-$3.50
Wave Propagation in Solids, 1969, Book No. G00006, L-$13.50, M-$6.75

Biomechanics

1975 Advances in Bioengineering, 1975, Book No. G00097, L-$12.00, M-$6.00
1976 Advances in Bioengineering, 1976, Book No. G00105, L-$7.00, M-$3.50
Advances in Bioengineering, 1974, Book No. H00077, L-$18.00, M-$9.00
1967 Biomechanical and Human Factors, 1967, Book No. G00050, L-$9.50, M-$4.75
Biomechanics, 1966, Book No. H00061, L-$10.50, M-$5.25
Biomechanics Monograph, 1967, Book No. G00043, L-$11.00, M-$5.50
1973 Biomechanics Symposium—AMD-Vol. 2, 1973, Book No. G00033, L-$12.00, M-$6.00
Biomedical Fluid Mechanics, 1966, Book No. H00047, L-$12.50, M-$6.25

Controls

Control of Distributed Parameter Systems, 1969, Book No. G00032, L-$5.00, M-$2.50
Differential Games: Theory and Applications, 1970, Book No. G00066, L-$6.00, M-$3.00
Dynamics of Automatic Controls, 1948, Book No. G00014, L-$7.00, M-$3.50
Identification of Parameters in Distributed Systems, 1974, Book No. I00019, L-$7.00, M-$3.50
1976 Joint Automatic Control Conference—Productivity, 1976, Book No. I00103, L-$50.00, M-$50.00
1970 Joint Automatic Control Conference, 1970, Book No. I00069, L-$30.00, M-$15.00
Learning Systems, 1973, Book No. G00065, L-$6.00, M-$3.00
Singular Perturbations: Order Reduction in Control System Design, 1972, Book No. G00070, L-$4.50, M-$2.25
Stochastic Problems in Control, 1968, Book No. I00038, L-$6.00, M-$3.00
Stochastic Processes in Dynamical Problems, 1969, Book No. G00016, L-$13.00, M-$6.50

Design

Design Engineering Conference, 1960, Book No. I00035, L-$6.00, M-$3.00
Design for Elevated Temperature Environment, 1971, Book No. G00035, L-$7.50, M-$3.75
Design Technology Transfer, 1974, Book No. H00017, L-$40.00, M-$20.00
Designing for High Impact Technology, 1967, Book No. G00048, L-$3.50, M-$1.75
Flexible Rotor-Bearing System Dynamics:
Part I—Critical Speeds and Response of Flexible Rotor Systems, 1972, Book No. H00042, L-$5.00, M-$2.50
Part II—Bearing Influence and Representation in Rotor Dynamics Analysis, 1972, Book No. H00046, L-$3.50, M-$1.75
Part III—Unbalance Response and Balancing of Flexible Rotors in Bearing, 1973, Book No. H00048, L-$4.00, M-$2.00
New Design Standards for Flexible Couplings, 1966, Book No. H00050, L-$3.50, M-$1.75
Physics of Fiber Contact, 1970, Book No. G00067, L-$4.00, M-$2.00

Fluids

Advances in Fluidics (With Discussion Booklet), 1967, Book No. G00044, L-$22.00, M-$11.00
Discussions only, Book No. H00008, L-$2.00, M-$1.00
Applications of Fluid Mechanics to Wind Engineering, 1975, Book No. I00088, L-$3.50, M-$1.75
Cavitation and Polyphase Flow Forum—1976, 1976, Book No. I00097, L-$10.00, M-$5.00
Cavitation and Polyphase Flow Forum, 1975, Book No. I00087, L-$7.00, M-$3.50
Cavitation Forum—1971, 1971, Book No. I00002, L-$5.50, M-$2.75
Cavitation Forum—1970, (With Discussion Booklet), 1970, Book No. I00071, L-$5.50, M-$2.75
Cavitation Forum—1969, 1969, Book No. I00050, L-$4.00, M-$2.00
Cavitation in Fluid Machinery (With Discussion Booklet), 1965, Book No. H00043, L-$16.00, M-$8.00
Discussions only, Book No. H00062, L-$2.50, M-$1.25
Cavitation Research Facilities and Techniques (Including Discussions), 1964, Book No. I00044, L-$12.50, M-$6.25
Discussions only, Book No. I00052, L-$2.00, M-$1.00
Cavitation State of Knowledge (With Discussion Booklet), 1969, Book No. I00013, L-$18.50, M-$9.25
Discussions only, Book No. I00025, L-$2.50, M-$1.25
Cavity Flows, 1975, Book No. I00085, L-$15.00, M-$7.50
Centrifugal Compressor and Pump Stability, Stall and Surge, 1976, Book No. I00098, L-$20.00, M-$10.00
Cost of Inefficiency in Fluid Machinery, 1975, Book No. I00086, L-$10.00 M-$5.00
Flow Studies in Air and Water Pollution, 1973, Book No. I00001, L-$22.00, M-$11.00
Fluid Dynamic Measurements, 1971, Book No. G00081, L-$17.50, M-$8.75
Fluid Jet Control Devices, 1962, Book No. G00003, L-$8.50, M-$4.25
Fluid Mechanics in the Petroleum Industry, 1975, Book No. G00093, L-$10.00, M-$5.00
Fluid Mechanics of Combustion, 1974, Book No. I00034, L-$20.00, M-$10.00
Fluid Mechanics of Mixing, 1973, Book No. I00033, L-$20.00, M-$10.00
Fluid Meters, Their Theory and Application—Sixth Edition, 1971, Book No. G00079, L-$20.00, M-$10.00
Application—Part II of Fluid Meters: Interim Supplement 19.5 on Instruments and Apparatus, 1972, Book No. G00018, L-$14.00, M-$11.20
Fully Separated Flows, 1964, Book No. I00045, L-$8.50, M-$4.25
Measurement in Unsteady Flow, 1962, Book No. H00041, L-$8.50, M-$4.25
Multi-Phase Flow Symposium, 1963, Book No. H00032, L-$7.50, M-$3.75
Numerical/Laboratory Computer Methods in Fluid Mechanics, 1976, Book No. G00106, L-$35.00, M-$17.50
Pumping Machinery for Marine Propulsion (With Discussion Booklet), 1968, Book No. I00022, L-$11.00, M-$5.50
Discussions only, Book No. I00008, L-$2.00, M-$1.00
Rheology, 1965, Book No. I00057, L-$10.00, M-$5.00
Role of Nucleation in Boiling and Cavitation (With Discussion Booklet), 1970, Book No. I00072, L-$22.00, M-$11.00
Discussions only, Book No. I00078, L-$2.00, M-$1.00
Water Hammer, 1933, Book No. I00007, L-$5.00, M-$2.50
Water Hammer in Hydraulics and Wave Surges in Electricity, 1961, Book No. I00041, L-$15.00, M-$12.00
Water Hammer in Pumped Storage Projects, 1965, Book No. H00044, L-$13.00, M-$6.50

Heat Transfer

Advances in Thermophysical Properties at Extreme Temperatures and Pressures, 1965, Book No. I00055, L-$19.00, M-$9.50
Augmentation of Convective Heat and Mass Transfer, 1970, Book No. G00076, L-$21.00, M-$10.50
Dry and Wet/Dry Cooling Towers for Power Plants—Vol. 6, 1973, Book No. H00015, L-$14.50, M-$7.25
Environmental Effects of Thermal Discharges—The Elements of Formulating a Rational Public Policy, 1970, Book No. G00073, L-$8.00, M-$4.00
Fifth Symposium on Thermophysical Properties, 1970, Book No. G00068, L-$19.00, M-$9.50
Fourth Symposium on Thermophysical Properties, 1968, Book No. I00018, L-$25.00, M-$12.50
Heat Transfer in Low Reynolds Number Flow—Vol. 5, 1971, Book No. H00071, L-$8.00, M-$4.00
Heat Transfer in Rod Bundles, 1968, Book No. H00003, L-$8.50, M-$4.25
International Developments in Heat Transfer, 1963, Book No. H00012, L-$40.00, M-$20.00
Liquid-Metal Heat Transfer and Fluid Dynamics, 1970, Book No. G00077, L-$23.50, M-$11.75
Non-Equilibrium Two-Phase Flows, 1975, Book No. G00094, L-$10.00, M-$5.00
Progress in Int'l Research on Thermodynamic and Transport Properties, 1962, Book No. G00039, L-$24.00, M-$12.00
Recent Developments in Thermophysical Properties Research—Vol. 3, 1971, Book No. H00069, L-$3.50, M-$1.75

Sixth Symposium on Thermophysical Properties, 1973, Book No. G00046, L-$24.50, M-$12.25
Spent Nuclear Fuel Heat Transfer—Vol. 2, 1971, Book No. H00068, L-$6.00, M-$3.00
Survey of Nucleonic Heat Transfer—Vol. 1, 1971, Book No. H00067, L-$5.00, M-$2.50
Thermal Problems in Biotechnology, 1968, Book No. G00051, L-$7.50, M-$3.75
Transport Phenomena in Atmospheric and Ecological Systems, 1967, Book No. G00061, L-$3.50, M-$1.75
Two-Phase Flow & Heat Transfer in Rod Bundles, 1969, Book No. H00027, L-$11.00, M-$5.50
Two Phase Flow Instrumentation, 1969, Book No. H00016, L-$9.50, M-$4.75

Lubrication

Assessment of Lubricant Technology, 1972, Book No. G00001, L-$20.00, M-$10.00
Bearing and Seal Design in Nuclear Power Machinery, 1967, Book No. G00056, L-$22.00, M-$11.00
Boundary Lubrication—An Appraisal of World Literature, 1969, Book No. G00005, L-$33.50, M-$16.75
Computer-Aided Design of Bearings and Seals, 1976, Book No. G00108, L-$10.00, M-$5.00
Friction and Lubrication in Metal Processing, 1966, Book No. H00059, L-$17.00, M-$8.50
Gas Lubrication (by V. N. Constantinescu), Translation from Rumanian, 1969, Book No. G00015, L-$19.50, M-$9.75
Life Adjustment Factors for Ball and Roller Bearings—An Engineering Design Guide, 1971, Book No. H00074, L-$6.50, M-$3.25
Loss Prevention of Rotating Machinery, 1972, Book No. G00017, L-$7.50, M-$3.75
PTFE Seals in Reciprocating Compressors—An ASME Design Manual, 1975, Book No. I00082, L-$15.00, M-$7.50

Management

Effective Management of Engineering Resources, 1975, Book No. H00095, L-$6.00, M-$3.00
Engineering Computer Software: Verification, Qualification, Certification, 1971, Book No. G00042, L-$12.50, M-$6.25
Engineer's Responsibility to Society, 1969, Book No. I00009, L-$4.00, M-$2.00
Fifty Years Progress in Management 1910-1960, Book No. I00011, L-$14.00, M-$7.00
Frank Gilbreth Centennial, 1969, Book No. I00043, L-$6.00, M-$3.00
Gantt on Management, 1962, Book No. G00040, L-$9.00, M-$6.00
Impact of Competitive Technology on Engineering Management, 1973, Book No. H00051, L-$5.00, M-$2.50
International Impact on Engineering Managers, 1965, Book No. I00064, L-$6.00, M-$3.00
International Patterns of Engineering Management—A Constructive Analysis, 1974, Book No. H00055, L-$6.00, M-$3.00
Managing Engineering Manpower, 1967, Book No. G00057, L-$5.00, M-$2.50
Small Plant Management, 1960, Book No. H00028, L-$14.00, M-$11.20
Unwritten Laws of Engineering, 1944, Book No. I00006, L-$1.00, M-$.50

Materials

ASME Handbook—Engineering Tables, 1956, Book No. G00021, L-$22.50, M-$18.00
ASME Handbook: Metals Engineering—Design, 1965, Book No. H00001, L-$28.75, M-$23.00
ASME Handbook: Metals Engineering—Processes, 1958, Book No. I00023, L-$22.50, M-$18.00
ASME Handbook: Metals Engineering — Properties, 1954, Book No. H00002, L-$22.50, M-$18.00
1976 ASME-MPC Symposium on Creep-Fatigue Interaction, Series MPC-3, 1976, Book No. G00112, L-$45.00, M-$22.50
Behavior of Superheater Alloys in High Temperature, High Pressure Steam, 1968, Book No. H00014, L-$7.00, M-$3.50
Chrome-Moly Steel in 1976, Series MPC-4, 1976, Book No. G00113, L-$16.00, M-$8.00
Elevated Temperature Properties in Austenitic Stainless Steels, 1974, Book No. G00058, L-$15.00, M-$7.50
Generation of Isochronous Stress - Strain Curves, 1972, Book No. I00049, L-$8.00, M-$4.00
Graphite Fiber Composites, 1967, Book No. G00060, L-$3.50, M-$1.75
Heat-Treated Steels for Elevated Temperature Service, 1966, Book No. H00056, L-$9.50, M-$4.75
Analysis of Data from Symposium on Heat-Treated Steels for Elevated Temperature Service, 1967, Book No. G00045, L-$3.50, M-$1.75
Int'l Research in Production Engineering, 1963, Book No. G00024, L-$28.00, M-$14.00
Manual on Cutting of Metals, 1952, Book No. B00016, L-$12.00, M-$6.00
Materials Technology—An Interamerican Approach, 1968, Book No. H00034, L-$27.00, M-$13.50
Materials Technology—Part I, An Interamerican Approach for the Seventies, 1970, Book No. I00075, L-$30.00, M-$15.00
Materials Education—Part II, An Interamerican Approach for the Seventies, 1970, Book No. I00076, L-$15.00, M-$7.50
Metal Properties for the Petroleum and Chemical Industries, Series MPC-2, 1976, Book No. G00103, L-$30.00, M-$15.00
Properties of Weldments at Elevated Temperatures, 1968, Book No. H00018, L-$8.00, M-$4.00
Reports of Current Work on Behavior of Materials at Elevated Temperatures, 1974, Book No. G00087, L-$18.00, M-$9.00
Structural Materials for Service at Elevated Temperatures in Nuclear Power Generation, Series MPC-1, 1975, Book No. G00099, L-$50.00, M-$25.00
Structures and Materials, 1969, Book No. H00023, L-$22.00, M-$11.00
Theory of Special Casting Methods, Translation from Russian, 1962, Book No. I00040, L-$9.00, M-$4.50
2-1/4 Chrome 1 Molybdenum Steel in Pressure Vessels and Piping, 1971, Book No. G00011, L-$12.50, M-$6.25
2-1/4 Chrome 1 Molybdenum Steel in Pressure Vessels and Piping—A Current Evaluation, 1972, Book No. G00025, L-$9.50, M-$4.75

Metric

SI-1 ASME Orientation and Guide for Use of SI (Metric) Units— Seventh Edition, 1976, Book No. E00058, L-$2.00, M-$1.00
SI-2 ASME Text Booklet, SI Units in Strength of Materials—Second Edition, 1976, Book No. E00082, L-$3.00, M-$1.50
SI-3 ASME Text Booklet, SI Units in Dynamics, 1976, Book No. E00083, L-$4.00, M-$2.00
SI-4 ASME Text Booklet—SI Units in Thermodynamics, 1976, Book No. E00084, L-$6.50, M-$3.25
SI-5 ASME Text Booklet, SI Units in Fluid Mechanics, 1976, Book No. E00085, L-$5.00, M-$2.50
SI-6 ASME Text Booklet, SI Units in Kinematics, 1976, Book No. E00086, L-$3.00, M-$1.50
SI-8 ASME Text Booklet, SI Units in Vibration, 1976, Book No. E00088, L-$3.00, M-$1.50
SI-10 Steam Charts, SI (Metric) and U.S. Customary Units, 1976, Book No. E00090, L-$25.00, M-$12.50
Transactions of Technical Conference on Metric Mechanical Fasteners, 1975, Book No. E00092, L-$12.00, M-$9.60

Ocean

Marine Propulsion Systems, 1976, Book No. G00110, L-$25.00, M-$12.50
Ocean Engineering Mechanics, 1975, Book No. G00095, L-$20.00, M-$10.00
Ocean Resources Utilization, 1976, Book No. G00111, L-$20.00, M-$10.00

Power

Advanced Centrifugal Compressors, 1971, Book No. H00038, L-$16.00, M-$8.00
Advances in Energy Conversion Engineering (Papers, Critiques and Summaries), 1967, Book No. G00053, L-$32.00, M-$16.00
1967 ASME Steam Tables with Mollier Chart, 1968, Book No. G00038, L-$15.00, M-$7.50
Mollier Chart only, Book No. G00041, L-$4.00, M-$2.00
1976 ASME-ANS International Conference on Advanced Nuclear Energy Systems, 1976, Book No. H00099, L-$55.00, M-$55.00
CIMAC—10th International Conference on Combustion Engines:
Papers and Discussions, 1973, Book No. H00080, L-$65.00, M-$65.00
Discussions only, 1973, Book No. H00085, L-$20.00, M-$20.00
Coal Fouling and Slagging Parameters, 1974, Book No. H00086, L-$6.50, M-$3.25
Corrosion and Deposits from Combustion Gases, Abstracts and Index, 1970, Book No. H00084, L-$25.00, M-$12.50
Diesel and Gas Engine Power:
1970 Proceedings, Book No. H00075, L-$15.00, M-$7.50
1969 Proceedings, Book No. H00009, L-$12.50, M-$6.25
1968 Proceedings, Book No. H00045, L-$15.00, M-$7.50
Diesel Fuel Oils, 1948, Book No. G00012, L-$4.00, M-$2.00
Engineering Developments in Energy Conversion, 1965, Book No. I00062, L-$14.00, M-$7.00
Fuels Research in the Western World, 1964, Book No. I00054, L-$2.00, M-$1.00
Gas Turbine Pumps, 1972, Book No. H00076, L-$12.50, M-$6.25
Loss Prevention of Rotating Machinery, 1972, Book No. G00017, L-$7.50, M-$3.75
1974 Report on Diesel and Gas Engine Power Costs, 1974, Book No. H00049, L-$5.50, M-$2.75
9th Intersociety Energy Conversion Engineering Conference, 1974, Book No. H00026, L-$70.00, M-$60.00
Theoretical Steam Rate Tables, 1969, Book No. I00003, L-$15.00, M-$7.50

Pressure Vessels

Advances in Design for Elevated Temperature Environment, 1975, Book No. G00092, L-$18.50, M-$9.25
Computational Fracture Mechanics, 1975, Book No. G00091, L-$18.50, M-$9.25
Design for Elevated Temperature Environment, 1971, Book No. G00035, L-$7.50, M-$3.75
1976 Elevated Temperature Design Symposium, 1976, Book No. G00104, L-$6.00, M-$3.00
Engineering Computer Software: Verification, Qualification, Certification, 1971, Book No. G00042, L-$12.50, M-$6.25
Fuel Element Analysis, 1975, Book No. G00090, L-$9.50, M-$4.75
Limit Analysis Using Finite Elements, 1976, Book No. G00109, L-$14.00, M-$7.00
Pressure Vessel and Piping 1972 Computer Programs Verification, 1972, Book No. I00024, L-$15.00, M-$7.50
First International Conference on Pressure Vessel Technology:
Design and Analysis—Part I, 1969, Book No. G00062, L-$37.50, M-$18.75
Materials and Fabrication—Part II, 1969, Book No. G00063, L-$37.50, M-$18.75
Discussions—Part III, 1970, Book No. G00064, L-$20.00, M-$10.00

Second International Conference on Pressure Vessel Technology:
Part I—Design and Analysis, 1973, Book No. G00082, L-$40.00, M-$20.00
Part II-Materials, Fabrication and Inspection, 1973, Book No. G00083, L-$40.00, M-$20.00
Part III—Discussions, 1974, Book No. G00084, L-$20.00, M-$10.00
Pressure Vessels and Piping: Analysis and Computers, 1974, Book No. G00031, L-$20.00, M-$10.00
Pressure Vessels and Piping: Design and Analysis—A Decade of Progress:
Volume One—Analysis, 1972, Book No. G00019, L-$35.00, M-$17.50
Volume Two—Components and Structural Dynamics, 1972, Book No. G00020, L-$35.00, M-$17.50
Volume Three—Materials and Fabrication, 1976, Book No. G00100, L-$50.00, M-$25.00
Volume Four—Quality Assurance—Applications—Components, 1976, Book No. G00101, L-$50.00, M-$25.00
Pressure Vessels and Piping—Verification and Qualification of Inelastic Analysis Computer Programs, 1975, Book No. G00088, L-$12.50, M-$6.25
Reliability Engineering in Pressure Vessels and Piping, 1975, Book No. G00089, L-$11.00, M-$5.50
Seismic Analysis of Pressure Vessel and Piping Components, 1971, Book No. I00030, L-$15.00, M-$7.50
Software User: Education and Qualification, 1972, Book No. I00016, L-$5.50, M-$2.75
Thermal Structural Analysis Programs: A Survey and Evaluation, 1972, Book No. H00019, L-$8.50, M-$4.25
Three-Dimensional Continuum Computer Programs for Structural Analysis, 1972, Book No. I00021, L-$6.00, M-$3.00

Research

Research Needs Report: Design, Materials, and Manufacturing Research, 1976, Book No. H00089, L-$5.00, M-$2.50
Research Needs Report: Energy Conversion Research, 1976, Book No. H00090, L-$10.00, M-$5.00

Solid Waste

Combustion Fundamentals for Waste Incineration, 1974, Book No. H00087, L-$30.00, M-$15.00
Incinerator and Solid Waste Technology, 1962–1975, Book No. I00092, L-$60.00, M-$30.00
1970 National Incinerator Conference (With Discussions), 1970, Book No. I00070, L-$25.00, M-$12.50
Discussions only, Book No. I00060, L-$6.50, M-$3.25
1972 National Incinerator Conference (With Discussions), 1972, Book No. I00081, L-$28.00, M-$14.00
Discussions only, Book No. I00079, L-$5.00, M-$2.50
1974 National Incinerator Conference—Resource Recovery Thru Incineration (With Discussions), 1974, Book No. I00083, L-$35.00, M-$17.50
1976 National Waste Processing Conference Proceedings—From Waste to Resource Through Processing (With Supplement), 1976, Book No. I00096, L-$90.00, M-$45.00
Survey of Disposal of Industrial Wastes by Combustion: Volume II, 1972, Book No. H00082, L-$10.00, M-$5.00

Transportation

Anthology of Rail Vehicle Dynamics—Freight Car Impact—Vol. 1, 1971, Book No. H00064, L-$20.00, M-$10.00
Anthology of Rail Vehicle Dynamics—Effects of Train Action and Rail Car Vibration—Vol. II, 1972, Book No. H00065, L-$25.00, M-$12.50
Anthology of Rail Vehicle Dynamics—Axles, Wheels and Rail-Wheel Interaction—Vol. III, 1973, Book No. H00066, L-$30.00, M-$15.00
Combined price for H00064-65-66, L-$65.00, M-$32.50
Fifth International Forum for Air Cargo, 1970, Book No. G00069, L-$12.50, M-$6.25
Defining Transportation Requirements—1968 Transportation Engineering Conference, 1969, Book No. I00063, L-$17.50, M-$8.75
1966 National Transportation Symposium, 1966, Book No. H00058, L-$22.00, M-$11.00
1976 Proceedings of the Fourth Intersociety Conference on Transportation, 1976, Book No. H00097, L-$40.00, M-$40.00
1970 Rail Transportation Proceedings, 1970, Book No. G00071, L-$19.00, M-$9.50
1971 Rail Transportation Proceedings, 1971, Book No. G00080, L-$20.00, M-$10.00
1972 Rail Transportation Proceedings, 1972, Book No. H00053, L-$25.00, M-$12.50
1973 Rail Transportation Proceedings, 1973, Book No. G00023, L-$25.00, M-$12.50
1974 Rail Transportation Proceedings, 1974, Book No. G00086, L-$25.00, M-$12.50
1975 Rail Transportation Proceedings, 1976, Book No. G00098, L-$30.00, M-$15.00
Symposium on Railroad Equipment Dynamics, 1976, Book No. G00102, L-$20.00, M-$10.00

Other Books of Interest

Adventures in the Navy, in Education, Science, Engineering and in War (by W. F. Durand) A Life Story, 1953, Book No. A00003, L-$5.00, M-$2.50
Annotated Bibliography on High Pressure Technology, 1964, Book No. I00046, L-$14.50, M-$7.25
ASME Goals, 1970, Book No. I00068, L-$2.50, M-$1.25
Cumulative Index to Transactions of the ASME 1971–1975, 1976, Book No. B00025, L-$59.00, M-$47.20
Index to ASME Technical Papers (1880–1956), 1957, Book No. B00028, L-$29.00, M-$14.50
Index to Transactions of the ASME (1957–1970), 1972, Book No. B00024, L-$50.00, M-$40.00
Frank and Lillian Gilbreth, Partners for Life, 1949, Book No. A00008, L-$6.50, M-$3.25
High-Pressure Measurement, 1963, Book No. H00031, L-$10.95, M-$8.75
I Remember--Autobiography of Dexter S. Kimball, 1953, Book No. A00006, L-$5.00, M-$2.50
Miller, Fred J., A Biography, 1941, Book No. A00007, L-$2.00, M-$1.00
Modern Jupiter—The Story of Charles Proteus Steinmetz, 1958, Book No. A00011, L-$4.00, M-$2.00
Scientific Blacksmith—An Autobiography of Mortimer E. Cooley, 1947, Book No. A00010, L-$4.50, M-$2.25
Standard Handbook for Mechanical Engineers (7th Edition), 1967, Book No. E00028, L-$35.00, M-$28.00

PERIODICALS

MECHANICAL ENGINEERING—Annual subscription price is $10.00 (subscription included in membership dues). Add $2.00 for postage for subscriptions mailed outside the U.S. and Canada. New subscriptions and subscriptions mailed outside the U.S. and Canada must be prepaid.

APPLIED MECHANICS REVIEWS (published monthly)—Annual subscription price is $185.00 to nonmembers and $170.00 to ASME members. Add $18.00 for each subscription mailed outside the U.S. and Canada. New subscriptions and subscriptions mailed outside the U.S. and Canada must be prepaid.

TRANSACTIONS OF THE ASME
Journal of Applied Mechanics
Journal of Engineering for Industry
Journal of Engineering for Power
Journal of Heat Transfer
Journal of Lubrication Technology
Journal of Dynamic Systems, Measurement and Control
Journal of Engineering Materials and Technology
Journal of Fluids Engineering
Journal of Pressure Vessel Technology

Annual subscription rates to nonmembers: one journal $50.00, two journals $96.00, three journals $142.00, four journals $188.00, five journals $232.00, six journals $276.00, seven journals $318.00, eight journals $360.00, all nine journals $400.00. 50% discount to ASME members. Add $1.50 for each subscription mailed outside the U.S. and Canada. New subscriptions and subscriptions mailed outside the U.S. and Canada must be prepaid.

1975 BOUND TRANSACTIONS OF THE ASME

This four-volume set contains all the 1975 Journals of the ASME.
Volume I—*Engineering for Power, Engineering for Industry, and Pressure Vessel Technology*, Book No. B00096, L-$70.00, M-$35.00
Volume II—*Heat Transfer, Dynamic Systems, Measurement and Control, and Engineering Materials and Technology*, Book No. B00097, L-$70.00, M-$35.00
Volume III—*Applied Mechanics*, Book No. B00098, L-$70.00, M-$35.00
Volume IV—*Lubrication Technology and Fluids Engineering*, Book No. B00099, L-$70.00, M-$35.00
Combined set—Volumes I-IV, Book No. B00100, L-$250.00, M-$125.00
Previous years also available in Bound Volumes.
Please be sure to specify year(s) and individual titles of Transactions wanted.
Certain volumes are out of print.
Binders for Transactions of the ASME, Book No. B00036, L-$5.00, M-$4.00

ASME MISCELLANEOUS PAPERS

The papers in this list were presented at ASME during 1975 but were not published in the *Transactions* of the ASME or in full in MECHANICAL ENGINEERING. They can be consulted in the Engineering Societies Library where photostatic copies may be obtained and quotations will be given upon request.

A

Abdel-Moneim, M. T., and Change, Y. W.
Two-Dimensional Transient Flow Analysis of a Pipe-Elbow Loop by Finite-Differences. 75—PVP-69.

Abdelnour, T. A., Passerello, C. E., and Huston, R. L.
An Analytical Analysis of Walking. 75—WA/Bio-4.

Abe, T.
see **Hinami, S.**

Aburomia, M. M., Cho, S. M., and Sawyer, R. H.
Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers. 75—WA/HT-101.

Adams, M.
see **Sines, G.**

Adams, R. G.
see **McDonald, C. F.**

Adams, T. N.
The Effects of Test Procedure on the Interpretation of NO_x Emission Data from a Gas Turbine. 75—WA/APC-9.

Addicott, W. C.
see **Kroenke, W. C.**

Adduci, A. J.
Aircraft Oxygen Systems: Independence of Ground Equipment and Service. 75—ENAs-26.

Advani, S. B., and D'Souza, A. F.
On the Design of Suboptimal Regulators for Linear Distributed Systems. 75—WA/Aut-9.

Ahlert, R. C., and Mehta, B. M.
Simulation and Field Observation of Heated Discharge Patterns. 75—WA/HT-61.

Ahner, D. J., and Boothe, W. A.
Process Systems for Conversion of Difficult Fuels to Synthetic Fuels for Baseload Gas Turbines. 75—GT-73.

Aiba, T.
Linear Cooling of an Aircraft Gas Turbine Combustor. 75—HT-3.

Akay, A., Hodgson, T. H., and Bailey, J. R.
Sound Radiation from the Impact of a Sphere on an Elastic Plate. 75—DET-51.
see **Weisman, J.**

Akesson, B. A.
Dynamic Damping of Wind-Induced Stochastic Vibrations. 75—DET-10.

Alcone, J. M.
Low Cost Solar Augmented Heat Pump System for Residential Heating and Cooling. 75—WA/Sol-7.

Ali, S. A.
see **Bahar, L. Y.**

Allen, J. M., and Erickson, L. B.
NASTRAN Analysis of a Turbine Blade and Comparison with Test and Field Data. 75—GT-77.

Allman, W. B.
Optimization of Plant Cooling Water Systems. 75—IPWR-7.

Alpert, R. L.
Pressure Modeling Transient Crib Fires. 75—HT-6.

Alton, L. R., Bauer, E. H., and Patrick, J. W.
Benefits of Advanced Space Suits for Supporting Routine Extravehicular Activity. 75—ENAs-39.

Ambs, L. L., and Veenema, Jr., R. J.
Power Turbines for Ocean Thermal Energy Conversion Systems. 75—WA/OCE-11.

Amero, R. C., Silver, R. S., and Yanik, S. J.
Hydrodesulfurized Residual Oils as Gas Turbine Fuels. 75—WA/GT-8.

Amin, Sanjay, Reid, R. C., and Modell, M.
Reforming and Decomposition of Glucose in an Aqueous Phase. 75—ENAs-21.

Amode, J. O., and Feldman, K. T.
Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery. 75—WA/HT.36.

Amundrud, G. L.
see **Davies, K.**

Andersen, B. W.
see **Redd, F. J.**

Anderson, David
Effects of Equivalence Ratio and Dwell Time on Exhaust Emissions from an Experiment Premixing Prevaporizing Burner. 75—GT-69.

Anderson, R. W.
Railroading the Ethical. 75—TS-4.

Anderson, T. L.
see **Pan, Y. S.**

Andonedis, A., and Roe, K. K.
Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View. 75—WA/NE-4.

Andresen, J. A.
see **Luttrell, N. W.**

Angold, J. A.
Experience with a Long Distance Unit Coal Train. 75—ICT-4.

Anyiwo, J. C., and Meroney, R. N.
A Semi-Empirical Transition Criterion for Laminar Wall Boundary Layers. 75—FE-27.

Aoyama, T., Inasaki, I., and Yonetsu, S.
Dynamic Behavior of Hydrostatic Thrust Bearing. 75—DET-2.

Arena, C. C.
see **Thompson, P. A.**

Ariga, I.
see **Honami, S.**

Agriga, I.
see **Masuda, S.**

Ariga, I.
see **Misuki, S.**

Armaly, B. F., and Lepper, S. P.
Diurnal Stratification of Deep Water Impoundments. 75—HT-35.

Arnas, D. A.
see **Portier, J. J.**

Arnold, J. R.
Product Planning and Development - An Evolutionary Process - One Company's Experience. 75—WA/Mgt-8.

Ascher, M. C.
Can ASME Support an Engineer in the Exercise of Societal Responsibilities? (A Pilot Study in Perspective) 75—TS-1.

Aspland, J. A.
Planning, Design and Operation of LNG Terminals for Western LNG Terminal Company. 75—ICT-19.

Ayorinde, O. A., Kobayashi, A. S., Chen, J. C. H., and Merati, J. K.
A Finite Element Large Deformation Analysis of a Tapered Aorta. 75—WA/Bio-5.

B

Baade, P. K. and Morris, R. D.
Use of Impedance Data for Avoiding Propeller Fan Resonance. 75—DET-54.

Bachtler, C. S.
Discrete Synthesis of a Minimum Weight Helical Spring. 75—DET-134.

Badaliance, R.
see **Gupta, G. D.**

Badgley, R. H., Smalley, A. J., and Fleming, D. P.
Drive-Train Dynamics Technology: State-of-the-Art and Design of a Test Facility for Advanced Development. 75—DET-74.

Bahar, L. Y. and Ali, S. A.
Coupled Bending and Torsional Response of Nuclear Power Plant Structures to Earthquake Loading. 75—DET-52.

Bai, Monty and Foster, J. E.
An Analytical and Experimental Study of the Dynamic Response of a Press. 75—DET-48.

Bailey, J. R., Daggerhart, J. A., and Stewart, N. D.
A Systems Approach for Control of Punch Press Noise. 75—DET-49.

Bailey, J. R.
see **Akay, A.**

Bailey, J. R.
see **Brooks, T. F.**

Baker, H. N.
see **Borkowski, J. V.**

Baker, J. M., Clark, G. W., Dolbec, A. C. and Patel, A. S.
Automation of Multi-Generator Combined Cycle Plants. 75—Pwr-23.

Baker, J. M., McMullen, J. C. and Withey, D. J.
Control and Automation of Single Generator Combined Cycle Plants. 75—Pwr-18.

Baker, J. R.
Laboratory Testing of Controls for Aircraft Turbine Engines. 75—GT-101.

Baker, P. H. and Schulze, F. W.
Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Locomotives. 75—WA/RT-12.

Baldur, R.
see **Lague, G.**

Bamford, W. H.
see **Buchalet, C. B.**

Banks, W. C.
see **Douty, R. A.**

Bannerot, R. B., and Howell, J. R.
Moderately Concentrating Flat-Plate Solar Energy Collectors. 75—HT-54.

Bannister, R. L.
see **Heymann, F. J.**

Bardwell, R. A.
see **Luttrell, N. W.**

Barlow, G. C.
see **Holladay, T. E.**

Barrett, L. D.
Teflon - Fabric Bearings in the Helicopter Rotor System. 75—Det-125.

Barroil, J.
see **Lafay, J.**

Barron, W. A. and Palcza, J. L.
Jet-Induced Thermal Effects for VTOL Aircraft. 75—GT-96.

Barry, W. R.
Finite Element Analysis of Casing Threads. 75—Pet-9.

Bart, R. K., Hauck, E. W. and Torti, M. L.
Experience on the Manufacture of Gas Turbine Vanes of Hot Pressed Silicon Nitride and Silicon Carbide. 75—GT-99.

Barthelemy, J. L.
A Heat Sink Concept for Subsurface Ice Thickening. 75—WA/HT-96.

Bartlett, D. A. and Foster, A. R.
Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR. 75—WA/HT-44.

Basiulis, A., and Plost, M.
Waste Heat Utilization Through the Use of Heat Pipes. 75—WA/HT-48.

Baskett, J. D.
see **Fleming, M. L.**

Bass, R. L.
see **Holster, J. L.**

Bauer, E. H.
see **Alton, L. R.**

Baughn, J. W.
see **Chan, A. L.**

Beachley, N. H.
see **Christenson, B. C.**

Beans, E. W.
A Design Study of a Fan Augmented Ramjet. 75—GT-97.

Beattie, D. R. H.
Friction Factors and Regime Transitions in High Pressure Steam-Water Flows. 75—WA/HT-4.

Beck, J. V.
Criteria for Comparison of Methods of Solution of the Inverse Heat Conduction Problem. 75—WA/HT-82.

Beck, J. V.
see **Schimmel, W. P.**

Becker, J.
see **Hassan, H.**

Beckman, W. A.
see **Freeman, T. L.**

Becko, Y.
Heat Transfer Analysis Stator by Thermal and Kinematic Boundary Layers Theory. 75—GT-15

Bekofske, K.
Attenuation of Acoustic Energy Across a Turbine Stage with Subsonic Relative Flow. 75—GT-17.
Bell, C. R.
see **Galluzzo, N. G.**
Bell, F. R.
see **McDonald, C. F.**
Bendick, P. J.
see **Smith, C. R.**
Bennett, J. A.
Automated Design of Multi-Objective Systems. 75—DET-111.
Benoit, M.
see **Ross, B.**
Bentz, J. C. and Evans, N. A.
Hemodynamic Flow in the Region of a Simulated Stenosis. 75—WA/Bio-10.
Berggren, R. G.
see **King, R. T.**
Bergles, A. E.
see **Hong, S. W.**
Berk, R.
State-of-the-Art Overview: Priority Techniques for High Occupancy Vehicles on Urban Freeways. 75—ICT-6.
Berke, J. G.
Procurement - The Pull Side of Technology Transfer. 75—ENAs-3.
Bertsch, O. L., Sun, C. L. and Conway, L.
A Three-Dimensional Finite Element Analysis of a Steam Generator Channel-Head-Complex - Comparison of Theory and Experiment. 75—PVP-59.
Betz, G. M.
An Analysis of Successful Defenses Against OSHA Citations. 75—PEM-6.
Bevevino, J. W. and Fanaritis, J. P.
TEMA and the Nuclear Power Industry. 75—Pwr-17.
Bhadoria, B. S.
see **Chakraborty, J.**
Bhinder, F. S.
see **Kastner, L. J.**
Bhushan, B.
Design Synthesis of Safety Devices on a Logging Trailer: Part II. 75—DE-55.
Bingham, M. G.
Development of a Technique to Provide a Predictable Solids Separation with the Rotary Mud Separator. 75—Pet-31.
Birkhead, W. G.
see **Mason, D.**
Biron, A.
see **Bui-Quoc, T.**
Bittel, L. R.
A Model of Simulated Management Experience for Engineering Managers. 75—WA/Mgt-5.
Blackmore, D. F. and Gross, R. J.
An Analysis of a Hydro-Pneumatic Ride Strut. 75—WA/FE-22.
Blackwell, B. F. and Reis, G. E.
Geometrical Aspects of the Troposkien as Applied to the Darrieus Vertical-Axis Wind Turbine. 75—DET-42.
Blair, C. K.
see **Boehm, R. F.**
Blanding, K. B.
Forming the Team for the Difficult Project. 75—DE-2.
Bleach, R. D. and Nagel, D. J.
Craters Produced by High Power-Density Lasers. 75—WA/HT-49.
Blum, E., Scott, V. D. and Smith D. A.
Active Suction Affixed Handbook/Equipment Mount. 75—WA/OCE-12.
Blum, H. A.
The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy. 75—WA/Pet-3.
Board, D. B.
Incipient Failure Detection in CH-47 Helicopter Transmissions. 75—WA/DE-16.
Bodo, C. A.
see **See, G. G.**
Boehm, R. F., Chen, M. J. and Blair, C. K.
Temperatures in Human Teeth Due to Laser Heating. 75—WA/Bio-8.
Bomke, E. H.
A Forecast of Power Developments, 1975-2000. 75—Pwr-5.
Bondybey, V. E.
see **Fitch, A. H.**
Booher, C. R.
see **Holden, A. N.**
Booth, J. B.
Particulate Control Equipment for Industrial Power Boilers. 75—IPWR-4.
Booth, T. C.
An Analysis of the Turbine Endwall Boundary Layer and Aerodynamic Losses. 75—GT-23.
Boothe, W. A.
see **Ahner, D. J.**
Borkowski, J. V. and Baker Jr., H. N.
Lash (Lighter Aboard Ship) A Revolutionary New Concept of Marine Cargo Transport. 75—ICT-18.
Boronow, W. S.
Cost-Effectiveness of Refrigerated Air for Avionics Cooling on Wide-Body Commercial Aircraft. 75—ENAs-9.
Bosio, R. C. and Suryanarayana, N. V.
Solar Assisted Heat Pump System: A Parametric Study for Space Heating of a Characteristic House in Madison, Wisconsin. 75—WA/Sol-8.
Botkin, M. E. and Lubkin, L. J.
Welded Joint Stiffness Obtained Using Solid Finite Elements. 75—DET-3.
Botman, M.
see **Mak, S. W.**
Bouffioux, P.
see **Hoppe, N.**
Bowley, W. W.
see **Hollworth, B. R.**
Bowman, L. H.
see **Olson, C. A.**
Boyadjieff, G. I.
Elimination of Drill Pipe Damage with a Frictional Drive Spinning Device. 75—Pet-7.
Boyle, D. R.
see **Rust, J. H.**
Bradgley, R. H.
see **Darlow, M. S.**
Brandmaier, H. E. and Kamarck, F. M.
Modification of Thermowell Design to Include Fatigue. 75—PVP-71.
Brandon, C. A. and Gaddis, J. L.
Parametric Evaluation of a Dual-Layer Dynamic Hyperfiltration Membrane for Recovery of Spacecraft Wash Water at Elevated Temperature. 75—ENAs-46.
Brannam, I.
see **Davies, K.**
Branstetter, R. L.
see **Roberts, G. A.**
Bravenec, E. V. and Turnipseed, H. S.
The Effect of Electrode Manipulation on Deposit Notch Toughness. 75—WA/PVP-18.
Brawner, C. C.
see **Walsh, J. M.**
Breen, B. P.
see **Norton, D. M.**
Breugelmans, F. A. E.
The Mach 2 Axial Flow Compressor Stage. 75—GT-22.
Breugelmans, F. A. E.
The Supersonic Axial Inlet Component in a Compressor. 75—GT-26.
Breugelmans, F. A. E.
see **Starken, H.**
Brewer, G. E. F.
Electrodeposition of Paint: Advantages in Design - Corrosion Protection, Cost, and Ecology. 75—DE-57.
Brewer, J. W.
Bond Graphs of Microeconomic Systems. 75—WA/Aut-8.
Brewer, J. W.
see **Pimental, K. D.**
Brodeur, R. H.
An Overview of Rail Car Equipment for Intermodal Traffic. 75—ICT-3.
Brooks, E.
see **Hickman, W. H.**
Brooks, T. F. and Bailey, J. R.
Mechanisms of Aerodynamic Noise Generation in Idling Woodworking Machines. 75—DET-47.
Brose, H. F.
Partial Air Oxidation Slagging Pyrolysis of Solid Waste for Supplemental Energy. 75—ENAs-28.
Brown, A. and Minty, A. G.
The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios. 75—WA/HT-17.
Brown, C. A.
see **Kobayashi, A. S.**
Brown, D.
see **Maddux, K.**
Brown, D. J., Jensen, A. and Whalley, P. B.
Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow. 75—WA/HT-7.
Brueggemann, W. H. and Faulkner, L. L.
Acoustic Transmission of Pipe Wrapping Systems. 75—WA/Pwr-7.
Brzustowski, T. A., Gollahalli, S. R., Gupta, M. P., Kaptein, M. and Sullivan, H. F.
Radiant Heating from Flares. 75—HT-4.
Buchalet, C. B. and Bamford, W. H.
Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients. 75—WA/PVP-3.
Buckingham, E. K.
Surface Endurance of Tufftrided Materials. 75—DE-11.
Buhl, A. R. and Graham, J.
The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors. 75—WA/NE-7.
Bui-Quoc, T., Saheb, R. E. and Biron, A.
Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel. 75—WA/PVP-17.
Buljan, S. T. and Kleiner, R. N.
Development of a Low Thermal Expansion Magnesium-Aluminum-Silicate Ceramic for Gas Turbine Heat Exchanger Applications. 75—GT-66.
Bullen, A. G. R. and Tsai, C. I.
Transit Operations in a Mathematical City. 75—ICT-7.
Burgdorg Jr., O. and Henderson, J. M.
Performance Optimization of a System Having Specified and Experimentally Determined Constraints. 75—DET-104.
Burns, R. A.
Liquid and Solid Radwaste Experience at the Nine Mile Point BWR. 75—Pwr-9.
Burris, R. E., Heilman, W. K. and Maughan, C. V.
Long-Range Maintenance Planning for Large Steam Turbine-Generators. 75—PEM-12.
Bursik, J. W.
Multivalued Critical Specific Heat Capacity Derivatives. 75—HT-38.
Burt, R. A.
see **Hunt, S. R.**
Burton, C. E.
see **Smith, R. T.**
Burton, W. J.
Electric Rates in Today's Economy. 75—Tex-9.
Buschman, H. W., Hutter, E., Leman, J. D. and Moriarty, K. J.
Ten Years' Maintenance Experience at EBR-11. 75—WA/NE-3.
Bush, G. W. and Godbey, J. W.
Field Testing the Performance of Gas Turbine Exhaust Heat Recovery Steam Generators. 75—GT-76.
Buss, L. B. and Dauer, A. J.
Air Cycle Air Conditioning of Turbine Powered Helicopters. 75—ENAs-20.
Butler, D. J.
see **Miller, W. H.**
Byam, Jr., J. E., Dreymann, S. S. and Pitrolo, A. A.
Residual Fuel Treating and Handling for Base Load Gas Turbines. 75—GT-72.
Byrd, E. A.
see **Gee, S.**

C

Cadek, F. F.
see **Hill, K. W.**
Caldwell, W. N.
see **List, H. A.**
Caledonia, G. E. and Teare, J. D.
Laser Beam - Atmospheric Aerosol Interactions. 75—WA/HT-42.
Calistrat, M. M.
Grease Separation Under Centrifugal Forces. 75—PTG-3.
Camarero, R.
see **Langhame, Y.**
Campbell, C. D.
see **Evans, P. S.**
Campbell, T. C.
Status of Slurry Pipeline Transportation of Bituminous Coal. 75—ICT-21.
Candiota, L. F. and Eichberger, L. C.
Deformation and Stresses in Oil and Gas-Well Casing Due to Slip Hanger Assemblies. 75—Pet-16.

Carelli, M. D. and Markley, R. A.
Preliminary Thermal-Hydraulic Design and Predicted Performance of the Clinch River Breeder Reactor Core. 75—HT-71.
Carl, D. E., Obidinski, E. S. and Jersey, C. A.
Exhaust Emissions from a 25-MW Gas Turbine Firing Heavy and Light Distillate Fuel Oils and Natural Gas. 75—GT-68.
Carrubba, R. V.
see **Pfefferle, W. C.**
Carter, L. G.
see **Cook, C.**
Caruso, W. J.
see **Dodd, V. R.**
Casterline, J. E.
see **Hill, K. W.**
Cato, G. A. and Hall, R. E.
Field Measurements of Pollutant Emissions from Industrial Boilers. 75—WA/APC-7.
Catton, I.
see **Dhir, V.**
Cavage, R. L.
Lift-Fan Characteristics Selection for 1980-85 V/Stol Carrier Onboard Delivery Aircraft. 75—GT-98.
Chaffin, D. B.
On the Validity of Biomechanical Models of the Low-back for Weight Lifting Analysis. 75—WA/Bio-1.
Chakraborty, J. and Bhadoria, B. S.
Surface Durability Ratings for On-Center and Off-Set Spur Face Gears. 75—PTG-4.
Chamis, C. C. and Minich, M. D.
Structural Response of Fiber Composite Fan Blades. 75—Gt-78.
Chan, A. L., Baughn, J. W. and Hoffman, M. A.
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube. 75—WA/HT-52.
Chan, S. H. and Grolmes, M. A.
Hydrodynamically Controlled Rewetting. 75—HT-70.
Chang, N.
see **Haines, D. W.**
Chang, Y. W.
see **Abdel-Moneim, M. T.**
Chao, E. Y.
Functional Evaluation of Total Knee Replacement Patients Through Gait Analysis. 75—APMB-5.
Chapman, Albert.
Everything You Have Always Wanted to Know About Built-Up Roofs But Didn't Ask! 75—PEM-11.
Chatas, A. T. and Richardson, E. M.
The Multiple-Well Manifold/Production Station. 75—Pet-15.
Chatto, R. B.
Mathematical Programming Applied to Reliability Analysis. 75—DET-132.
Chen, J. C. H.
see **Ayorinde, O. A.**
Chen, M.-J.
see **Boehm, R. F.**
Chen, T. S.
see **Mucoglu, A.**
Chen, T.-S.
see **Stepner, D. E.**
Cheng, S. C., Gorman, D. J. and Kulkarni, K.
Surge Tank Pressure Transients During Multiple Surges. 75—FE-30.
Cheremisinoff, P. N.
Controlling Air Pollution: Pollution Engineering Fundamentals Technical Update Seminar. 75—DE-30.
Cherry, C. C.
see **Miller, W. H.**
Chester, L. B.
see **Kececioglu, D.**
Cheung, T.
see **Oosthuizen, P. H.**
Chiang, C. C.
Closed Form Design Solutions for Box Type Heat Exchangers. 75—WA/DE-15.
Chiu, Y. P.
Approximate Calculation of Power Loss in Involute Gears. 75—PTG-2.
Cho, D. H.
see **Epstein, M.**
Cho, F. L.
see **Patel, Y. A.**
Cho, S. M.
see **Aburomia, M. M.**
Chon, W. Y.
see **Chun, M. H.**
Chou, C. C. and Lukowski, S. A.
Studies on the Frictional Coupling Mechanism in Multidisk Stepless Transmissions. 75—DE-35.
Christensen, H. E. and Kipp, H. W.
Heating in Shuttle RSI Gaps Derived from an Inverse Heat Transfer Solution. 75—ENAs-15.
Christenson, B. C., Beachley, N. H. and Frank, A. A.
The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm. 75—WA/Aut-20.
Chronowski, R. A. and Molayem, B.
Nox Emissions from Atmospheric Fluidized-Bed Boilers. 75—Pwr-4.
Chu, H. H.-S. and Churchill, S. W.
The Effect of Heater Size and Location on Two-Dimensional, Laminar, Natural Convection in a Square Channel. 75—HT-51.
Chu, T.-Y.
see **Mollendorf, J. C.**
Chun, M. H. and Chon, W. Y.
Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region. 75—WA/HT-32.
Chung, B. T. F. and Yeh, L. T.
Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection. 75—WA/HT-67.
Chung, B. T. F., Thomas, L. C. and Pang, Y.
Heat Transfer for Turbulent Annular Flow of High Prandtl Number Fluids. 75—HT-39.
Churchill, S. W.
see **Chu, H. H.-S.**
Citron, S. J.
see **Prabhakar, R.**
Clark, G. W.
see **Baker, J. M.**
Clark, T. B.
see **Pons, R. L.**
Class, C. R., Presta, G. and Trucks, H.
Thermal Control Evaluation of a Shuttle Orbiter Solar Observatory Using Skylab ATM Backup Hardware. 75—ENAs-2.
Cleve, von H. -H.
Comparison of Different Combinations of Wet and Dry Cooling Towers. 75—WA/Pwr-10.
Closner, J. J.
Design and Application of Prestressed Concrete for Oil Storage. 75—Pet-18.
Cloutier, P. D., McGowan, J. G. and Goss, W. P.
Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems. 75—WA/TS-3.
Coban, A.
see **Odgers, J.**
Cobble, M. H. and Smith, P. R.
Simulation of a Small Solar-Power Station. 75—WA/Sol-4.
Coffin, W. M.
The ST6 Gas Turbine in Trains Operating Experience. 75—GT-91.
Colcord, A. R.
see **Tatom, J. W.**
Cole, B. N.
see **Warda, H. A.**
Cole, N. C.
see **King, R. T.**
Collins, D. J.
Automatic Vehicle Identification: The Key to Effective Intermodal Terminal Operations. 75—ICT-17.
Connell, G. F.
see **Harris, E. R.**
Conway, L.
see **Bertsch, O. L.**
Cook, C. and Carter, L. G.
Cementing Research in Directional Gas Well Completions. 75—Pet-30.
Cook, R. D.
see **Phillips, W. F.**
Cooke, A. V.
Engine Health Monitoring for the Gas Turbines in Royal Naval Ships. 75—GT-24.
Coombs, Jr., R. E.
Energy Conservation at Western Electric Company. 75—IPWR-8.
Cottney, D. J. and Ewins, D. J.
On Predicting the Natural Frequencies of Shrouded Bladed Disks. 75—DET-113.
Coughlin, H. B.
Municipal and Industrial Control—Problem Statement. 75—ENAs-59.
Coulter, D. M., Hwang, C. T. and Yip, F. C.
Prediction of Frost Formation Around a Chilled Natural Gas Pipeline. 75—WA/HT-88.
Coutinho, J. de S.
see **Fedor, O. H.**
Cramer, J. J.
see **Spence, N. C.**
Crawford, M. and Khamkanist, W.
Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall. 75—WA/FE-20.
Crawford, M. E., Kays, W. M. and Moffat, R. J.
Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection. 75—WA/HT-11.
Croix, de la L. and Oberlander, G.
Introduction of Aircraft-Derived Gas Turbines in Railroad Service. 75—GT-92.
Crowe, C. T., Sharama, M. P. and Stock, D. E.
The Particle-Source-in-Cell (PSI-Cell) Model for Gas-Droplet Flows. 75—WA/HT-25.
Cumpsty, N. A.
Excess Noise from Gas Turbine Exhausts. 75—GT-61.
Cunningham, R. G., Holman, J. P., Steinmeyer, D. and Bell, K. J.
Educational Trends in Heat Transfer. 75—HT-50.
Cunningham, S. S. and Laughlin, W. T.
The Surface Absorption of Unpainted Alloys at 10.6 Microna. 75—WA/HT-66.
Curtis, A. R.
see **Kordes, E. E.**
Czapski, U. H. and Mumford, W.
The Heat Transfer from Thermal Effluent. 75—HT-25.

D

Daggerhart, J. A.
see **Bailey, J. R.**
Dalton, C.
see **Dalton, M.**
Dalton, C.
see **Wardell, J. B.**
Dalton, M. and Dalton, C.
Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule. 75—WA/MGT-1.
Darlow, M. S. and Badgley, R. H.
Applications for Early Detection of Rolling-Element Bearing Failures Using the High-Frequency Resonance Technique. 75—DET-46.
DasGupta, S. and Sharma, S. P.
Stresses in an Adhesive Lap Joint. 75—WA/DE-18.
Dauer, A. J.
see **Buss, L. B.**
Dauer, F. W.
Impact Printer Synthesis. 75—DE-16.
Davies, K., Brannam, I. and Amundrud, G. L.
A Progress Report to Late 1974 on Gas Turbine Operating Experience in the Canadian DDH 280 Class Destroyer. 75—GT-89.
Davis, G. M. and Sullenberger, A. G.
Logistics Management Strategies in an Urban Environment: A Pragmatic Approach. 75—ICT-12.
Davis, L. R.
see **Shirazi, M. A.**
Davis, L. R.
see **Siegel, D. L.**
Davis, W. R.
A General Finite Difference Technique for the Compressible Flow in the Meridional Plane of Centrifugal Turbomachinery. 75—GT-121.
Day, W. H.
see **Kydd, P. H.**
Dean, G. W. and White, S. W.
Data Acquisition and Processing in the NGTE Altitude Test Facility. 75—GT-124.
Deglio-Esposti, P. L.
see **Hassan, H.**
Delhaye, J. -M. and Jones, O. C.
Measurement Techniques for Transient and Statistical Studies of Two-Phase, Gas Liquid Flows. 75—HT-10.
Delucia, R. A.
see **Mangano, G. J.**
Demas, P.
Emissions of Volatiles from Non-Metallic Shipboard Materials—Electrical Insulations. 75—ENAs-35.

Dengi, F.
see **Harris, E. R.**

Dennis, A. J., Eriksson, R. H. and Seitelman, L. H.
Transient Response Analysis of Damped Rotor Systems by the Normal Mode Method. 75—GT-58.

Depew, C. A., Franklin, J. L. and Ito, C. H.
Combined Free and Forced Convection in Horizontal, Uniformly Heated Tubes. 75—HT-17.

Depew, C. A.
see **Walker, J. R.**

Desai, P., Williams, J. R., Rollins, J. and Lindsey, A. M.
Construction and Evaluation of Linear Segmented Solar Concentrators. 75—WA/Sol-6.

Dhir, V. and Catton, I.
Dryout Heat Fluxes for Inductively Heated Particulate Beds. 75—WA/HT-19.

Dickey, R. R.
see **Lundell, J. H.**

Dicristina, V., Legendre, P. J. and Elliot, M.
Laminar Surface Roughness Effects on Reentry Vehicle Nosetip Boundary Layer Transition—An Experimental Approach. 75—ENAs-44.

Diehl, R. C., Taber, J. J. and Walker, J. L.
Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers. 75—WA/CD-9.

Dierberger, J.
see **Linask, I.**

Diesburg, D. E.
Prediction of Toughness Behavior Using Precracked Charpy Specimens. 75—Pet-25.

Dieterich, D. A.
A Finite Element Computer Program for Predicting the Nonlinear Static and Dynamic Behavior of Viscoelastic Components. 75—DET-7.

Dimopoulos, A. P.
see **Patel, Y. A.**

Dobson, P. D.
see **Hubbard, M.**

Dodd, V. R., Dubner, R. M. and Caruso, W. J.
Steam Turbine Diaphragm Failure. 75—Pet-49.

Doering, H. von E.
see **Manna, M. C.**

Doherty, M. C.
Selection of Boiler Steam Conditions for Industrial Power Plants. 75—IPWR-12.

Dolan, D. F., Kittelson, D. B. and Whitby, K. T.
Measurement of Diesel Exhaust Particle Size Distributions. 75—WA/APC-5.

Dolbec, A. C.
see **Baker, J. M.**

Domoto, G. A.
see **Kao, T-T.**

Donaldson, A. B.
see **Schimmel, W. P.**

Dooher, J., Genberg, R., Lippman, R., Morrone, T., Moon, S. and Wright, D.
Emulsions as Fuels. 75—WA/Fu-3.

Dore, R.
see **Lakis, A. A.**

Doroschuk, V. E., Levitan, L. L. and Lantzman, F. P.
Investigations into Burnout in Uniformly Heated Tubes. 75—WA/HT-22.

Doscher, S. L.
Public Sector Technology Transfer—A Congressional Perspective. 75—WA/Aero-1.

Douty, R. A., Banks, W. C. and Schwartzbart, H.
Mechanical Properties of Welded Cast Steels for Arctic Service. 75—Pet-24.

Dowdell, R. B. and Wilson, M. P.
Status of the Analysis of Flow Through Concentric Square Edged Orifices. 75—WA/FM-4.

Doyle, T. J.
Superconductive Propulsion Motor Development at NSRDC. 75—WA/OCE-8.

Dreymann, S. S.
see **Byam, J. W.**

Driels, M.
Predicting Optimum Two-Stage Valve Closure. 75—WA/FE-2.

D'souza, A. F.
see **Advani, S. B.**

D'souza, N.
Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method. 75—WA/HT-81.

Dubner, R. M.
see **Dodd, V. R.**

Dudley, D. W.
Design and Development of Closed-Coupled, High Performance Epicyclic Gear Unit for Gas Turbines at 4600-HP Rating and 10:1 Ratio. 75—GT-109.

Due, H. F., Easterling, A. E. and Rogo, C.
Cascade Research on a Small, Axial, High-Work, Cooled Turbine. 75—GT-62.

Duffie, J. A.
see **Freeman, T. L.**

Dukes, W. H.
Some Principles of Brittle Material Design. 75—GT-112.

Durbetaki, P., Wedel, G. L. and Wulff, W.
Flame-Fabric Interaction during Preignition Processes. 75—HT-12.

Duret, J. L.
Contributions to the Development of Hydrogen-Embrittlement Resistant Production Strings. 75—Pet-33.

Durmann, G. and Longo, F. N.
Plasma Coatings Provide Hardness Economically. 75—DE-53.

Durocher, L. L. and Solecki, R.
Forced Harmonic Vibrations of an Elastic/Viscoelastic Three-Layered Plate. 75—DE-20.

Dusatko, G.
see **Laurendeau, R.**

E

Easterling, A. E.
see **Due, H. F.**

Eaton, F.
Computer Modeling of a Three-Dimensional Assembly. 75—DE-21.

Eberle, W. R.
Fluidically Controlled Active Suspension Systems for High Speed Ground Vehicles. 75—WA/Flcs-6.

Eck, B. J.
see **Novak, G. E.**

Eckels, P. W.
see **Rabas, T. J.**

Eckert, H.
see **Hassan, H.**

Edelstein, F.
A 2.2 Sq M (24 Sq Ft) Self-Controlled Deployable Heat Pipe Radiator—Design and Test. 75—ENAs-43.

Edenburn, M. W. and Wessling, F. C.
A Solar Heating System for a Northern New Mexico Adobe House. 75—WA/Sol-11.

Edfors, H. C.
Plastic Encapsulation Involves Carefully Considered Alternatives. 75—DE-7.

Edmondson, A. J., Milligan, M. W. and Speckhart, F. H.
Wood Plane Noise. 75—WA/PID-6.

Eichberger, L. C.
see **Candiota, L. F.**

Efferding, L. E.
see **Waszink, R. P.**

Eisenstadt, R. and Roulston, G. H.
A Low Temperature Brittle Fracture Investigation of Gray Iron and Nodular Iron on Machinery Castings. 75—GT-80.

Elkins, W. E.
see **Williams, B. A.**

Elliot, M.
see **Dicristina, V.**

Elrod, H. G.
see **Kao, T-T.**

Elston, L. W.
see **Tatom, J. W.**

Emery, A. F.
see **Kobayashi, A. S.**

Engel, P. A. and Sacher, E.
Mechanical Characterization of Elastomers. 75—DE-22.

Enomoto, H., Tsai, Y-W. and Essenhigh, R. H.
Heat Transfer in a Continuous Model Furnace: A Comparison of Theory and Experiment. 75—HT-5.

Epstein, M. and Cho, D. H.
Laminar Film Condensation on a Vertical Melting Surface. 75—HT-21.

Epstein, M.
Transient Behavior of a Volume-Heated Boiling Pool. 75—WA/HT-31.

Erickson, A. C.
see **Titterington, W. A.**

Erickson, L. B.
see **Allen, J. M.**

Eriksson, R. H.
see **Dennis, A. J.**

Essenhigh, R. H.
see **Enomoto, H.**

Evans, A. G.
Understanding the Characteristics of Brittle Materials. 75—GT-87.

Evans, N. A.
see **Bentz, J. C.**

Evans, P. S. and Campbell, C. D.
A Fluidically Controlled Aircraft Environmental System. 75—ENAs-7.

Ewing, R. D. and Makins, J. E.
Improvements in Sucker Rod Pumping Systems. 75—Pet-5.

Ewins, D. J.
see **Cottney, D. J.**

Exley, L. M.
see **Radway, J. E.**

Eyler, L. L.
see **Powe, R. E.**

Ezekiel, F. D.
Uses of Magnetic Fluids in Bearings, Lubrication and Damping. 75—DE-5.

F

Fabri, J. and Reboux, J.
Effect of Outer Casing Treatment and Tip Clearance on Stall Margin of a Supersonic Rotating Cascade. 75—GT-95.

Fader, G. B.
Impact of Fuel Rod Design on the Loss-of-Coolant Accident Analysis. 75—WA/HT-80.

Fanartis, J. P.
see **Bevevino, J. W.**

Farquhar, B. W.
see **Sloan, D.**

Faulkner, L. L.
see **Brueggemann, W. H.**

Fauske, H. K.
see **Henry, R. E.**

Fazekas, G. A.
On the Effect of Variation of Friction with Belt Speed. 75—WA/DE-27.

Fazio, P. P. and Salahuddin, A.
General Survey of Recent Developments in the Design and Analysis of Connections. 75—DE-39.

Fedor, O. H., Parsons, W. N. and Coutinho, J. de S.
Risk Management Technique for Design and Operation of Facilities and Equipment. 75—WA/Aero-5.

Feldman, K. T.
see **Amode, J. O.**

Felix, P. C.
see **Hanson, K. A.**

Fenton, R. G.
A Combined Reliability Function Representing Changing Environmental and Loading Conditions During Operation. 75—DET-127.

Fenton, R. G.
Optimum Design of Gear Pumps. 75—DE-58.

Fenton, R. G.
Profit or Loss, and Cash Flow Effects as Design Criteria. 75—DET-110.

Fenton, R. G.
Use of Computer Simulation in the Design of Mining Machinery and Material Handling Systems. 75—DET-108.

Ferguson, J. A.
see **Soo, S. L.**

Ferriter, N., Maiden, D. E., Winslow, A. M. and Fleck, J. A.
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves. 75—WA/HT-50.

Fetterolf, F. P. and Hurtt, J. H.
Testing of Forgings. 75—Pet-43.

Fey, F. L.
Monticello Nuclear Plant Radwaste System Operating Experience. 75—Pwr-24.

Fiala, C.
see **Nagumo, G.**

Field, M. P.
see **Rice, S. L.**

Fillo, J. A., Powell, J. and Benenati, R.
A Nonsteady Heat Conduction Code with Radiation Boundary Conditions. 75—WA/HT-91.

Finney, H. D.
Design of Ekofisk Center. 75—Pet-3.

Fischer, D. D.
see **Schrider, L. A.**

Fischer, F. J. and Kastor, R. L.
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In. 75—Pet-35.
Fisher, E. A.
Technical Ceramic Fabrication Processes. 75—GT-110.
Fitch, A. H., Bondybey, V. E. and Vogt, J. P.
Laser Bonding of Polymeric Materials. 75—DE-51.
Fitch, J. B. and Frick, P. A.
The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation. 75—WA/Aut-6.
Fleck, J. A.
see **Ferriter, N.**
Fleming, D. F.
see **Badgley, R. H.**
Fleming, M. L., Williams, J. L., Baskett, J. D. and Leach, J. W.
Self-Contained Heat Rejection Module for Future Spacecraft. 75—ENAs-42.
Fletcher, L. S. and Ott, W. R.
Thermal Conductance of Lead Ferrite and Boron Nitride. 75—HT-29.
Fletcher, L. S.
see **Sernas, V.**
Flitner, D. P.
A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications. 75—Pwr-30.
Flory, J. F. and Synodis, S. T.
Development of the Single Anchor Leg Mooring. 75—Pet-44.
Fogal, G. L. and Sauer, R. L.
Biowaste Monitoring System for Shuttle. 75—ENAs-34.
Fong, H. L., King, C. J. and Sephton, H. H.
An Experimental Study of Heat Transfer in Upflow Vertical Tube Evaporation. 75—HT-46.
Forster, H. W.
Dewatering of Rolling Mill Sludge from a Tin Mill. 75—PEM-18.
Fortescue, P.
see **McDonald, C. F.**
Foster, A. R.
see **Bartlett, D. A.**
Foster, J. E.
see **Bai, M.**
Foster, J. L.
see **Pier, J. R.**
Fowler, E. D. and Taylor, T. E.
Materials for Wellheads and Christmas Trees for Cold Climates. 75—Pet-17.
Fowler, E. D.
see **Uhl, W. K.**
Fowler, J. H.
Finite-Element Analysis of High-Pressure, Large Valve Gates. 75—Pet-6.
Fowlie, D. W. and Miles, D. D.
Vibration Problems with High Pressure Centrifugal Compressors. 75—Pet-28.
Fox, R. B.
see **Paret, R.**
Fraas, A. P.
A Cesium Vapor Cycle for an Advanced LMFBR. 75—WA/Ener-5.
Fraas, A. P.
Heat Exchangers for High Temperature Thermodynamic Cycles. 75—WA/HT-102.
Fraas, A. P.
Survey of Turbine Bucket Erosion, Deposits, and Corrosion. 75—GT-123.
Frank, A. A.
see **Christenson, B. C.**
Franklin, J. L.
see **Depew, C. A.**
Frankus, A. and Lee, G. C.
The Local Compliance Problem of Lung Elasticity. 75—APMB-6.
Freeman, T. L., Beckman, W. A., Mitchell, J. W. and Duffie, J. A.
Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems. 75—WA/Sol-3.
Frick, P. A.
see **Fitch, J. B.**
Friedlaender, G.
see **Panjabi, M. M.**
Friedly, J. C.
see **Sung, L. Y.**
Fukuda, K. and Kobori, T.
Analysis of Pre-wetting Heat Transfer, 75—WA/HT-33.
Fukuda, K.
see **Nakajima, I.**

G

Gabriele, G. A. and Ragsdell, K. M.
The Generalized Reduced Gradient Method: A Reliable Tool for Optimal Design. 75—DET-103.
Gabriele, G. A.
see **Schuldt, S. B.**
Gaddis, J. L.
see **Brandon, C. A.**
Gage, S. J.
Systems Approach to R&D Planning for Energy/Environmental Interface. 75—Pwr-2.
Gale, D. B.
Problem Definition in Passenger Air Terminal Design and Planning. 75—ICT-5.
Galluzzo, N. G., Bell, C. R. and McFarland, B. L.
Design Considerations for Systems Subject to Sodium/Water Reactions. 75—PVP-68.
Galluzzo, N. G.
Unsteady Water Injection Models for Analysis of Sodium/Water Reactions in Steam Generators. 75—PVP-67.
Gammuto, J. J.
Developing and Scheduling Maintenance Training Programs. 75—PEM-1.
Garba, J. A.
see **Wada, B. K.**
Garde, M. R.
Gas Turbine Train Development in France. 75—GT-122.
Garfield, E. K.
Rail Ferry by Auto-Train Corporation; Today and Tomorrow. 75—ICT-9.
Garg, D. P.
Technology Assessment and Social Choice: A Policy-Oriented Course. 75—WA/TS-2.
Gargesa, G.
see **Lingaiah, K.**
Gartner, J. R.
see **Marshek, K. M.**
Gartner, J. R.
see **Miller, H. M.**
Gaspari, G. P.
Dryout Measurements in Freon 12 in Aligned and Misaligned 19 Rod Clusters. 75—HT-23.
Gaspari, G. P.
see **Marinelli, V.**
Gater, R. A.
see **Rozalowski, G. R.**
Gauntner, J. W.
see **Gladden, H. J.**
Gee, S., Byrd, E. A. and Meredith, O. M.
An Interactive Approach to Interagency Technology Transfer. 75—ENAs-4.
Gelman, A. P.
Determining Interaction Effects in the Seismic Analysis of Components. 75—PVP-50.
Genberg, R.
see **Dooher, J.**
Gencsoy, H. T.
Method for Determining Drag and Seal Effectiveness of Idler Rolls in Conveyor Belt Systems. 75—DE-47.
Gerstin, R. A.
A Technical and Economic Overview of the Benefits of Repowering. 75—GT-16.
Ghosh, A.
see **Muju, M. K.**
Giammar, R. D., Krause, H. H. and Locklin, D. W.
The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion. 75—WA/CD-7.
Gibbons, J. H.
see **Neill, J. S.**
Gibson, G.
Aids to Boiler Inspections. 75—PEM-23.
Gidaspow, D.
see **Lyczkowski, R. W.**
Giedt, W. H.
see **Kopytoff, V.**
Gill, H. S.
Effective Management of Product Design and Development Projects. 75—DE-18.
Gilpin, R. R. and Wong, B. K.
The Ground Temperature Regime and its Relationship to Soil Properties and Ground Surface Cover. 75—WA/HT-98.
Givens, G. R.
see **Zinn, C. D.**
Gladden, H. J. and Gauntner, J. W.
Experimental Verification of Film-Cooling Concepts on a Turbine Vane. 75—WA/GT-21.
Glasser, K. F.
see **Schuller, M. R.**
Gleed, A. R.
see **Benedict, R. P.**
Glennon, J. P.
see **See, G. G.**
Glenny, D. E.
Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model. 75—WA/GT-10.
Godbey, J. W.
see **Bush, G. W.**
Goldsmith, R. L.
see **Golan, A.**
Gollahalli, S. R.
see **Bruzustowski, T. A.**
Gollan, A., Goldsmith, R. L. and Kleper, M.
Advanced Treatment of Most Hospital Wastewaters. 75—ENAs-47.
Gollan, A., Grant, D. and Goldsmith, R. L.
Treatment of Chemical and Mechanical Diesel Oil-Water Emulsions by Ultrafiltration Membranes. 75—ENAs-57.
Gonzalez, J. I. and Murad, P. A.
Environmental Control System Studies for the Advanced Strategic Air Launched Missile. 75—ENAs-5.
Gooch, P. W.
Fluidic Velocity Sensor for Gaseous Effluents. 75—WA/APC-6.
Goodson, R. E.
see **Prabhakar, R.**
Goodwin, G. M.
see **King, R. T.**
Gorla, R. S. R.
Unsteady Boundary Layers Over Rotating Blades. 75—GT-64.
Gorman, D. J.
Experimental and Analytical Study of Liquid and Two-Phase Flow Induced Vibration in Reactor Fuel Bundles. 75—PVP-52.
Gorman, D. J.
see **Cheng, S. C.**
Gorton, C. A.
see **Lakshminarayana, B.**
Gorzegno, W. P.
see **Norton, D. M.**
Gosman, A. D., Vlachos, N. S. and Whitelaw, J. H.
Measurement and Calculation of Laminar Flow Downstream of a Bend in a Round Tube and the Prognosis for Similar Investigations of Blood Flow in Venules. 75—APMB-7.
Goss, W. P.
see **Cloutier, P. D.**
Gostelow, J. P.
Trailing Edge Flows Over Turbomachine Blades and the Kutta-Joukowsky Condition. 75—GT-94.
Gould W. P.
see **Winkler, J. E.**
Graff, W. J. and Yang, S. S.
Reanalysis of Cruciform Specimen Fatigue Results by Statistical Methods. 75—Pet-46.
Graffeo, A. J.
see **Terry, J. P.**
Graham, J.
see **Buhl, A. R.**
Grant, D.
see **Gollan, A.**
Greber, I.
see **Sengupta, S.**
Greco, G.
see **Marinelli, V.**
Greenberg, M.
see **Hatfield, N.**
Greenfield, L. P. and Hodges, R. N.
An Investigation of Container Flat Car Ride Quality. 75—WA/RT-7.
Greenwald, G. F. and Kato, E. K.
The Delta Flexible Base Heat Shield Design. 75—ENAs-14.
Greer, J. B.
see **Noerager, J. A.**
Grieb, H., Schill, G. and Gumucio, R.
A Semi-Empirical Method for the Determination of Multistage Axial Compressor Efficiency. 75—GT-11.
Grief, R.
see **Smith, R. N.**
Griffith, P.
see **Ilseje, O.C.**
Grimmer, G. A.
Interactive Graphics—A New Tool for All N C Part Programmers. 75—GT-55.
Grolmes, M. A.
see **Chan, S. H.**

Gross, R. J.
see **Blackmore, D. F.**
Gu, A.
On the Flow Rate Optimization of Hydrostatic Bearings. 75—DE-12.
Gu, A.
Performance of Convergent and Divergent Narrow Gap Vacuum Seals. 75—WA/PID-4.
Gubbels, M. H.
see **Von Riesmann, W. A.**
Guber, F. H.
see **Kraus, H.**
Gubser, J. L. and Zara, J. A.
Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results. 75—WA/Aero-6.
Guenther, D. A.
Product Liability and the Mechanical Engineer. 75—WA/SAF-1.
Guillory, J. L.
Sensible Energy Transfer in a Dehumidifying Exchanger. 75—HT-34.
Gumucio, R.
see **Grieb, H.**
Gupta, B. P.
see **Mulholland, G. P.**
Gupta, B. P.
see **Smith, P. R.**
Gupta, C. P. and Sharma, C. P.
Entropy and Availability Function Values of Saturated Ammonia-Water Mixtures. 75—WA/PID-2.
Gupta, G. D. and Badaliance, R.
Interaction Between Two Inclined Cracks in a Plane. 75—WA/PVP-7.
Gupta, M. P.
see **Brzustowski, T. A.**
Gupta, S. D.
Plastic Analysis of Three-Dimensional Frames Considering Finite Length of Yielded Regions. 75—PVP-65.

H

Hadjain, A. H., Jan, H. W. and Linderman, R. B.
The Seismic Environment for Nuclear Power Plant Components - An Interface Problem. 75—DET-53.
Hagedorn, G. D.
see **Wyatt, S. V.**
Haile, E. L.
Aids to Preventive Maintenance. 75—PEM-22.
Haines, D. W. and Chang, N.
Application of Graphite Composites in Musical Instruments. 75—DE-27.
Haji-Sheikh, A.
Onset of Separation in Film Cooling Following a Slot. 75—WA/HT-16.
Hale, M. E. and Kugler, B. A.
The Acoustic Performance of Pipe Lagging Systems. 75—WA/Pet-2.
Haley, J. L.
see **Kindl, F. H.**
Hall, R. E.
see **Cato, G. A.**
Hamilton, L. P. and Sparks, B. E.
Pumps for Low Lubricity and Corrosive Fuels. 75—GT-102.
Hanson, K. A. and Felix, P. C.
Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels. 75—Pwr-28.
Har-oz, P. H.
see **Tatom, J. W.**
Harpel, W. L.
see **Terry, J. P.**
Harper, C. R., Hsieh, J. S. and Luk, C. H.
An Analysis of Waterhammer Loads in a Typical Nuclear Piping System. 75—PVP-53.
Harris, E. R., Connell, G. F. and Dengiz, F.
Cobal Handling Equipment and Storage (For Industrial Plants). 75—IPWR-1.
Harrison, J. W.
Aircraft On-Board Electrochemical Breathing Oxygen Generators. 75—ENAs-51.
Hassan, H., Becker, J. and Deglio-Esposti, P. L.
Spacelab Active and Passive Thermal Control Systems. 75—ENAs-62.
Hassan, H., Becker, J. and Eckert, H.
Spacelab Atmosphere Storage and Revitalization System. 75—ENAs-61.
Hatfield, N., Johnson, T. and Greenberg, M.
A New Design NDIR Atmosphere Analyzer for Submarines. 75—ENAs-31.
Hauck, E. W.
see **Bart, R. K.**
Heap, M. P., McComis, C., Tyson, T. J., McMillan, R. E., Zoldak, R. and Sommerlad, R. E.
The Control of Pollutant Emissions from Package Boilers. 75—WA/FU-4.
Heard, T. C.
Review of a Combined Steam and Gas Turbine Cycle for Pipeline Service. 75—GT-51.
Hechmer, J. L.
see **Wu, J. N. C.**
Heck, R. M.
see **Pfefferle, W. C.**
Helfer, P. E. and Jones, M. R.
Design Considerations for a Backoff Ram for Use in a Blowout Preventer. 75—Pet-13.
Hellman, J. M., Olson, C. A. and Yang, J. W.
Thermal Behavior of Densification Power Spiked PWR Fuel Rods During a LOCA. 75—GT-67.
Helminski, E. L.
The States' Role in the Utilization and Development of Environmental Technologies. 75—ENAs-12.
Henderson, J. M.
see **Burgdorf, O.**
Henderson, R. E.
see **Holladay, T. E.**
Henneman, J. W.
An Emergency Escape Breathing Device for Extreme Metabolic Loads. 75—ENAs-25.
Henry, R. E. and Fauske, H. K.
Energetics of Vapor Explosions. 75—HT-66.
Heppener, D. B., King, C. D. and Littles, J. W.
Zero-G Experiments in Two-Phase Fluids Flow Regimes. 75—ENAs-24.
Hersh, S.
see **Laurendeau, R.**
Herter, R.
see **Stewart, J. E.**
Hettche, L. R., Tucker, T. R., Schriempf, J. T., Stegman, R. L. and Metz, S. A.
Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06μ Laser Radiation. 75—WA/HT-40.
Heymann, F. J., Bannister, R. L. and Niskode, P. M.
Steam Turbine Noise - A Status Report. 75—Pwr-7.
Hickman, W. H. and Brooks, Ed.
Investigation of the Properties of the Annubar, a Flow Measurement Probe. 75—WA/FM-2.
Hill, K. W., Motley, F. E., Cadek, F. F. and Casterline, J. E.
Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles. 75—WA/HT-77.
Hill, M. L.
Digital Fuel Control of Industrial Gas Turbines. 75—GT-106.
Hilvers, D. E.
see **Prince, D. C.**
Hincks, H. F.
see **Loran, B. I.**
Hinton, B. M.
see **Kroenke, W. C.**
Hirata, M.
see **Kasagi, N.**
Hoare, R. G.
see **Morris, A. W. H.**
Hodges, R. N.
see **Greenfield, L. P.**
Hodgson, T. H.
see **Akay, A.**
Hoffman, A. H.
The Worcester Water Quality Study: A Joint Venture in Community Service. 75—WA/TS-7.
Hoffman, K. C.
A Methodology of Technology Analysis with Application to Energy Assessment. 75—WA/TS-8.
Hoffman, M. A.
see **Chan, A. L.**
Holcomb, R. S.
Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine. 75—WA/ENer-4.
Holden, A. N., Mumford, S. E. and Booher, Jr., C. R.
Testing of Ceramic Stator Vanes to 2500 F (1371 C). 75—GT-103.
Holladay, T. E., Barlow, G. C. and Henderson, R. E.
Development of a High Heat-Release Combustor for the F100 Gas Turbine. 75—GT-86.
Hollingshead, C. O.
Orientation and Training for Design-to-Cost. 75—DE-60.
Hollworth, B. R. and Bowley, W. W.
Heat Transfer Characteristics of an Impinging Jet in a Crossflow. 75—WA/HT-100.
Holman, F. F. and Kidwell, J. R.
Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor. 75—WA/GT-5.
Holman, J. P.
see **Cunningham, R. G.**
Holmes, R. E.
see **Reynolds, B. L.**
Holster, J. L., Bass, III, R. L. and Schroeder, E. C.
A Facility for Qualification Testing of Subsurface Safety Valves. 75—Pet-14.
Honami, S., Abe, T., Ariga, I. and Watanabe, I.
Investigation of Turbulent Flows in Curved Channels. 75—FE-32.
Hong, S. W. and Bergles, A. E.
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts. 75—HT-44.
Honma, T.
see **Shiraki, K.**
Hoppe, N., De Meulemeester, E., Bouffioux, P. and Verbeck, P.
COMETHE III-H for Fuel Rod Behavior Predictions. 75—WA/HT-75.
Horlock, J. H. and Lakhwani, C. M.
Propagating Stall in Compressors with Porous Walls. 75—GT-59.
Hornschuch, H.
see **Schoeneck, K. A.**
Hotaling, K. L.
Triaxially Expandable Circuit Arrays. 75—DE-33.
Houston, C. W.
Experiences of a Responsible Engineer. 75—TS-5.
Howard, A. H.
The Use of Solid Wastes as a Fuel to Generate Steam for an Industrial Plant. 75—IPWR-11.
Howe, J. T.
see **Lundell, J. H.**
Howell, J. R.
see **Bannerot, R. B.**
Hrycak, P., Levy, M. J. and Wilchins, S. J.
Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times. 75—WA/Bio-11.
Hsieh, J. S.
see **Harper, C. R.**
Hsu, M. B.
see **Pai, D. H.**
Huang, S. Y.
see **Li, K. W.**
Hubbard, M., Dobson, P. D. and Powell, J. D.
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor. 75—WA/Aut-17.
Huebotter, P. R.
see **Sha, W. T.**
Hughes, E. D.
see **Lyczkowski, R. W.**
Hume, P.
Maintenance Management. 75—PEM-8.
Hung, W. S. Y.
An Experimentally Verified NOx Emission Model for Gas Turbine Combustors. 75—GT-71.
Hung, W. S. Y.
Modeling and Measurement of NOx Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors. 75—WA/GT-3.
Hung, W.
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash. 75—WA/HT-39.
Hunn, B. D.
see **Willcutt, G. J. E.**
Hunt Jr., S. R. and Burt, R. A.
Engineering Design Studies for a Shuttle Waste Management System. 75—ENAs-56.
Hurter, D., and Lee, W. D.
Truck Fuel Economy State-of-the-Art Assessment. 75—ICT-13.
Hurtt, J. H.
see **Fetterolf, F. P.**
Hussain, M. J. and Johnson, H. E.
Recent Application of Multistage Centrifugal Compressors for Gas Transmission. 75—GT-54.

Huston, R. L.
see **Abdelnour, T. A.**
Hutter, E.
see **Buschman, H. W.**
Hwang, D. M.
Coulter, D.M.
Hwang, J. Y.
see **Waszink, R. P.**

I

Iloeje, O. C., Rohsenow, W. M. and Griffith, P.
Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow). 75—WA/HT-1.
Imaichi, K.
see **Ishii, N.**
Imasu, K.
see **Ishii, N.**
Ishii, N., Imaichi, K., Kagoroku, N. and Imasu, K.
Vibration of a Small Reciprocating Compressor. 75—DET-44.
Ito, C. H.
see **Depew, C. A.**

J

Jacobs, M. L.
see **Macken, N. A.**
Jacko, R. B., Nevendorf, D. W. and Yost, K. J.
Trace Metal Emissions from a Scrubber Controller Municipal Incinerator. 75—WA/APC-2.
Jackson, J. S.
Social Implications of Technology: An Economic Model Based on Efficiency. 75—WA/Aut-2.
Jacobs, R. M.
Data Collection as a Tool in Designing for Product Safety. 75—SAF-4.
Jakub, M. T.
Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants. 75—Pwr-15.
James, R. L.
The History and Use of Fire Resistant Fluids in Gas Turbines. 75—GT-118.
Jan, H. W.
see **Hadjian, A. H.**
Jarvis, G.
see **Knorr, R. H.**
Jensen, A.
see **Brown, D. J.**
Jensen, F. C.
see **Schubert, F. H.**
Jentz, N. E.
see **Loran, B. I.**
Jersey, C. A.
see **Carl, D. E.**
Jha, S. K.
see **Talbot, C. R. S.**
Jibben, J. J. and Lumsdaine, E.
An Automatic Control System for Sonic Inlets. 75—WA/Aut-1.
Johannsen, K.
see **Ramm, H.**
Johnson, C. E. and Linderoth Jr., L. S.
Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions. 75—WA/OCE-7.
Johnson, G. E. and Pierce, A. D.
The Relation between Picking Noise and Component Vibrations in Automatic Textile Looms. 75—DET-45.
Johnson, H. E.
see **Hussain, M. J.**
Johnson, P. D.
Managing Maintenance for Profit. 75—PEM-7.
Johnson, T.
see **Hatfield, N.**
Johnstone, B.
see **Raidt, J. B.**
Jones, J. R.
An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions. 75—WA/DE-11.
Jones, M. R.
Helfer, P. E.
Jones, O. C.
see **Delhaye, J. M.**

K

Kaftanoglu, B.
see **Kilkis, B.**
Karoroku, N.
see **Ishii, N.**
Kahil, J. E.
Automatic Nondestructive Testing of Oil Field Tubular Goods. 75—Pet-42.
Kakarala, C. R. and Thomas, L. C.
An Analysis of Liquid Metal Heat Transfer for Turbulent Tube Flow and Moderate to Low Peclet Numbers. 75—HT-33.
Kakarala, C. R. and Schaeper, A. W.
A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator. 75—WA/HT-13.
Kakarala, C. R. and Thomas, L. C.
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids. 75—WA/HT-59.
Kalasinsky, C.
see **Spence, N. C.**
Kalra, P.
Safe Train Separation in Modern Rapid Transit Systems. 75—ICT-11.
Kamarck, F. M.
see **Brandmaier, H. E.**
Kamiya, N.
An Approximate Nonlinear Stress Analysis of a Circular Cylindrical Pressure Vessel with a Flat Head Closure. 75—PVP-60.
Kannolt, J. R.
An Ultra Hi Speed Spin Test System. 75—DE-40.
Kano, T. and Yamamoto, S.
Thermal Ratchetting Mechanism under Cyclic Alternating Cold and Hot Shocks Constant Primary Load. 75—PVP-49.
Kaptein, M.
see **Brzustowski, T. A.**
Kar, S.
see **Raghunathan, S.**
Karim, G. A. and Mohindra, D.
An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel. 75—WA/GT-9.
Kasagi, N. and Hirata, M.
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder. 75—WA/HT-58.
Kastener, L. J. and Bhinder, F. S.
A Method for Predicting the Performance of a Centripetal Gas Turbine Fitted with a Nozzle-Less Volute Casing. 75—GT-65.
Kastor, R. L.
see **Fisher, F. J.**
Kasza, K. E.
The Effect of Transient Wall Suction and Blowing on Stagnation Point Flow and Heat Transfer. 75—FE-29.
Kato, E. K.
see **Greenwald, G. F.**
Katz, S.
Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion. 75—WA/Flcs-4.
Kaufman, R. E.
What's *U.P., D.O.C.?* 75—GT-125.
Kawada, A.
see **Nakajima, I.**
Kays, W. M.
see **Crawford, M. E.**
Kececioglu, D. and Chester, L. B.
Fatigue Reliability Under Combined Mean and Alternating Axial Stresses for AISI 1018 and 1038 Steels. 75—DET-128.
Keilman, L. R.
Schrock, V. E.
Keller, D.
see **Panjabi, M. M.**
Keller, R.
Gas Turbine Drive for New High Speed Trains. 75—GT-88.
Kellner, J. D.
Improved Thermal Storage Material for Portable Life Support Systems. 75—ENAs-40.
Kelly, G. M.
Cooling Tower Design and Evaluation Parameters. 75—IPWR-9.
Keltner, N. R.
Quasi-Coupling - An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems. 75—WA/HT-93.
Kennedy, C. A. and Lang, R. P.
Early Experience with a 31,050-Hp Regenerative Cycle Gas Turbine. 75—GT-53.
Khader, M. S. and Vachon, R. I.
Thermal Conductance of Granular Material in Vacuum. 75—HT-47.
Khamkanist, W.
see **Crawford, M.**
Khasnabis, S., Pickard, J. R. and Mann, W. E.
A Transient Distribution System for Downtown Alexandria. 75—ICT-10.
Kidwell, J. R.
Holman, F. F.
Kilkis, B. and Kaftanoglu, B.
Design of Data Base and Development of a Computer Program for Heating and Air Conditioning of Buildings. 75—DET-101.
Kim, R. H.
Computer-Aided Design Analysis and Selection of Heat Exchanger with Phase-Changing Media. 75—WA/PID-5.
Kindl, F. H. and Haley, J. L.
Design and Operation of a 26-MW Stag Plant. 75—GT-18.
King, C. D.
see **Heppner, D. B.**
King, C. J.
Fong, H. L.
King, R. T., Cole, N. C., Berggren, R. G. and Goodwin, G. M.
Properties and Structure of 16-8-2 Stainless Steel Weld Metal. 75—PVP-45.
Kinsel, W. C.
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies. 75—WA/HT-76.
Kinyon, B. W. and Vroom, D. W.
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating. 75—WA/HT-105.
Kipp, H. W.
see **Christensen, H. E.**
Kirillov, P. L.
see **Subbotin, V. I.**
Kirwan, M. S.
Redesign of Miniature Type Relays. 75—Prod-6.
Kittelson, D. B.
see **Dolan, D. F.**
Kjaer-Pedersen, N.
see **Knudsen, P.**
Klapatch, R. D.
Gas Turbine Emissions and Performance on Methanol Fuel. 75—Pwr-22.
Klatt, K. G. and Walling, R. L.
Comparative Tests of Wear Resistance of Polymers. 75—DE-26.
Kleiner, R. N.
see **Buljan, S. T.**
Kleper, M.
see **Golan, A.**
Klop, C.
see **Rossi, S.**
Klosterman, A. L., McClelland, W. A. and Sherlock, J. E.
Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques. 75—WA/Aero-9.
Kniazewycz, B. G.
The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation. 75—Pwr-27.
Knight, J. A.
see **Tatom, J. W.**
Knorr, R. H. and Jarvis, G.
Maintenance of Industrial Gas Turbines. 75—GT-93
Knott, R.
see **Weisman, J.**
Knudsen, P. and Kjaer-Pederson, N.
Performance Analysis of PWR Power Ramp Tests. 75—WA/HT-68.
Kobayashi, A. S., Brown, C. A. and Emery, A. F.
Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading. 75—WA/Bio-2.
Kobayashi, A. S.
see **Ayorinde, D. A.**
Kobori, T.
see **Fukuda, K.**
Kobori, T.
see **Nakajima, I.**
Kooyman, O. J.
see **Phillips, C. F.**
Koons, M. E.
The Transfer of Technology Through an Industrial Cooperation Program. 75—ENAs-11.
Kopytoff, V. and Giedt, W. H.
Computer Design of a Pyrotechnic-Powered Self-Decelerating Actuator. 75—DET-105.
Kordes, E. E. and Curtis, A. R.
Results of NASTRAN Modal Analyses and Ground Vibration Tests on the YF-12A Airplane. 75—WA/Aero-8.

Kordyban, E.
Long-Wave Disturbances in Two-Phase Wavy Flow. 75—WA/HT-28.
Kothmann, R. E.
see **Vegter, B. J.**
Kovacik, J. M.
How to Evaluate the Effectiveness of Industrial Plant Energy Systems. 75—IPWR-2.
Kovacs, S. G.
see **Rimbey, D. H.**
Kratochvil, J. A. and Rayner, H. M.
Minimizing Fuel Costs. 75—WA/Pwr-13.
Kraus, H., Nelson, N. W. and Guber Jr., F. H.
Analysis of Bottom Entry for Atmospheric Storage Tanks. 75—Pet-23.
Kraus, J. H.
The Selection and Optimization of a Continuously Variable Transmission for Automotive Use. 75—WA/Aut-16.
Krause, H. H.
see **Giammar, R. D.**
Kroenke, W. C., Addicott, G. W. and Hinton, B. M.
Interpretation of Finite Element Stresses According to ASME Section III. 75—PVP-63.
Krulls, G. E.
A Systems Approach to Liquid Fuel Treatment. 75—GT-84.
Kubanek, G. R.
see **Watkinson, A. P.**
Kugler, B. A.
see **Hale, M. E.**
Kuhre, C. J. and Reed, C. L.
The Shell Gasification Process for Synthesis Gas for SNG Manufacture. 75—WA/Fu-2.
Kulkarni, K.
see **Cheng, S. C.**
Kunder, G. A.
Radwaste System Startup and Operation Three Mile Island Nuclear Station, Unit 1. 75—Pwr-14.
Kuo, P. S.
Finite Element Approach to the Vibration Analysis of Elastic Disks on a Flexible Shaft. 75—GT-57.
Kurtz Jr., E. F. and Moyle, I. N.
Pressure-Distribution Data for Steam Ejectors. 75—WA/PID-3.
Kurzeka, W. J.
see **Welch, F. H.**
Kydd, P. H. and Day, W. H.
An Ultra High Temperature Turbine for Maximum Performance and Fuels Flexibility. 75—GT-81.

L

Lackey, M. E.
Four Variations of a Potassium Vapor Topping Cycle. 75—WA/Ener-3.
Laessig, R. E. and Stribula, M. R.
Simulation-Gaming in Energy Management Education. 75—WA/Mgt-2.
Lafay, J., Menant, B. and Barroil, J.
Local Pressure Measurements and Peripheral Flow Visualization in a Water 19-Rod Bundle Compared with FLICA II B Calculations: Influence of Helical Wire-Wrap Spacer System. 75—HT-22.
Lague, G. and Baldur, R.
An Axisymmetric Finite Element in Natural Coordinates. 75—WA/PVP-24.
Lahey, R. T.
see **Nixon, R. B.**
Lakhwani, C. M.
see **Horlock, J. H.**
Lakis, A. A. and Dore, R.
Analysis of Pressurized Cylindrical Vessel and Its Supports. 75—PVP-64.
Lam, T. L.
see **Sanday, S. C.**
Landberg, G. G.
System Considerations for the Design Installation and Operation of Mechanical Aerators. 75—PEM-19.
Landgraf, R. W.
see **Sherman, A. M.**
Lang, R. P.
see **Kennedy, C. A.**
Lang, F. F.
Structural Ceramic Materials Under Development. 75—GT-107.
Langhame, Y. and Camarero, R.
Unsteady Heat Conduction in Variable Conductivity Soils. 75—WA/HT-89.
Lantzman, F. P.
see **Doroschuk, V. E.**
Lapin, E. E.
Theoretical Performance of Vertical Axis Wind Turbines. 75—WA/Ener-1.
Lasseter, T. J.
The Numerical Simulation of Heat and Mass Transfer in Multi-Dimensional Two-Phase Geothermal Reservoirs. 75—WA/HT-71.
Laubach, G. E.
Orbiter Active Thermal Control System Description. 75—ENAs-58.
Laughlin, W. T.
see **Cunningham, S. S.**
Laurendeau, R., Hersh, S. and Dusatko, G.
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization. 75—WA/APC-3.
Leach, J. W.
see **Fleming, M. L.**
LeBlanc Jr., S. A.
The Seabee System and Its Terminal Requirements. 75—ICT-16.
Lee, G. C.
see **Frankus, A.**
Lee, Moo-Zung
Dynamic Load Amplification Factors for Safety Valve Headers. 75—PVP-70.
Lee, W. D.
see **Hurter, D.**
Legendre, P. J.
see **Decristina, V.**
Leman, J. D.
see **Buschman, H. W.**
Lemay, I., Whelan, J. M. and Shaw, W. J. D.
Design for Fatigue in Notched High-Strength Steel. 75—DE-31.
Lemezis, S.
see **Montgomery, W. O.**
Lentz, J. S.
Practical Aspects of Plate Testing. 75—Pet-48.
Leonard, D. A. and Rubins, P. M.
Laser Raman and Fluorescence Measurements Applied to Gas Turbine Exhaust Emissions. 75—GT-83.
Leonard, R. L.
Results Produced by a Technology Assessment of OCS Oil and Gas Resources. 75—WA/TS-6.
Lepofsky, R. J.
see **Townsend, M. A.**
Lepper, S. P.
see **Armaly, B. F.**
Lerch, C. P. and Wulff, P. H.
Fine Tuning and Detailed Testing of a New Heavy Duty G.T. in the Field. 75—GT-90.
Leslie, E. N.
Use of the Water Jet in Automated Production Cutting. 75—WA/Aut-21.
Lesso, W. G.
see **Zinn, C. D.**
Levitan, L. L.
see **Doroschuk, V. E.**
Levy, M. J.
see **Hrycak, P.**
Lewis, C. H.
see **Markhar, D. M.**
Lewis, J. R.
Federal Government Quality Assurance Procedures. 75—PEM-2.
Li, K. W. and Huang, S. Y.
Preliminary Thermal Analysis of Air-Storage Gas Turbine System. 75—Pwr-20.
Lin, C. H.
Analysis of a Regenerable Polyethyleneimine Carbon Dioxide and Humidity Control System. 75—ENAs-16.
Linask, I. and Dierberger, J.
A Fracture Mechanics Approach to Turbine Airfoil Design. 75—GT-79.
Lind, E. F.
Track/Train Dynamics Research and Progress: Phase One. 75—WA/RT-9.
Linderman, R. B.
see **Hadjian, A. H.**
Linderoth, L. S.
see **Johnson, C. E.**
Lindsey, A. M.
see **Desai, P.**
Lindsted, R. D.
see **Love, T. J.**
Lindsted, R. D.
see **Smith, R. V.**
Lingaiah, K. and Ramachandra, K.
Bending Stress in Wildhaber-Novikov Gears Due to Semi-Ellipsoidal Contact-Load Distribution. 75—DE-44.
Lingaiah, K. and Gargesa, G.
A New Design Factor for a Shrink Fitted Assembly. 75—DE-50.
Lingaiah, K.
see **Ramachandra, K.**
Linhares, A. B.
Public Sector Technology Transfer—The Policy Connection. 75—WA/Aero-3.
Linn, S. S.
see **Pillsbury, P. W.**
Lippman, R.
see **Dooher, J.**
List, H. A., Caldwell, W. N. and Marcotte, P.
Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting. 75—WA/RT-8.
Littles, J. W.
see **Heppner, D. B.**
Locklin, D. W.
see **Giammar, R. D.**
Longo, F. N.
see **Durmann, G.**
Loran, B. I., O'Hara, J. B., Jentz, N. E. and Hincks, H. F.
Gaseous Environmental Factors in Coal Pyrolysis Plant Design. 75—Pwr-3.
Love, T. J. and Lindsted, R. D.
Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator. 75—WA/Bio-6.
Lowery, R. L.
see **Moretti, P. M.**
Lu, S. C. H.
Incremental Stress-Strain Relationship for Finite Elasto-Plastic Deformation. 75—PVP-66.
Lubkin, J. L.
see **Botkin, M. E.**
Lucchini, F.
see **Marinelli, V.**
Lucy, M. H.
The NASA Langley Program for Molding Technology Utilizing Thermosetting Plastics. 75—DE-25.
Luk, Chih-Hung.
Effects of the Steam Chest on Steamhammer Analysis for Nuclear Piping Systems. 75—PVP-61.
Luk, C. H.
see **Haper, C. R.**
Lukowski, S. A.
see **Chou, C. C.**
Lumsdaine, E.
Heat Transfer Analysis of a Cavity-Type Solar Radiometer. 75—WA/Sol-2.
Lumsdaine, E.
see **Jibben, J. J.**
Lund, K. O.
Critical Heat Flux in a Subcooled, Low-Pressure Rod-Bundle with Various Rod Spacings. 75—HT-49.
Lundell, J. H., Dickey, R. R. and Howe, J. T.
Simulation of Planetary Entry Radiative Heating with a CO_2 Gasdynamic Laser. 75—ENAs-60.
Luttrell, N. W., Andresen, J..A. and Bardwell, R. A.
Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior. 75—WA/RT-4.
Lyczkowski, R. W., Gidaspow, D., Solbrig, C. W. and Hughes, E. D.
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase-Flow Equations and Their Finite Difference Approximations. 75—WA/HT-23.

M

MacAdam, W. K. and Standrod, S. E.
Design and Operational Considerations of a Plant Extracting Energy from Solid Waste for Industrial Use. 75—IPWR-3.
McCann, R. A.
see **Whitacre, G. R.**
McCarthy, T. C.
see **Wells, M. K.**
McClelland, W. A.
see **Klosterman, A. L.**
McComis, C.
see **Heap, M. P.**
McDermott, D. R.
A Simulation Study Examining the Benefits of an Urban Consolidated Terminal. 75—ICT-8.
McDonald, C. F., Adams, R. G., Bell, F. R. and Fortescue, P.
Component Design Considerations for Gas Turbine HTGR Power Plant. 75—GT-67.

McDonald, C. F.
Recuperator Development Trends for Future High Temperature Gas Turbines. 75—GT-50.
McDonald, C. K.
Seismic Analysis of Vertical Pumps Enclosed in Liquid Filled Containers. 75—PVP-56.
McDonald, J. S.
LMFBR Steam Generator Areas Requiring Special Attention. 75—WA/HT-10.
McEwen, G. N.
see **Williams, B. A.**
McFarlan, T. W.
Ultrasonic Testing in the Petroleum Industry - Thickness Measuring and Defect Detection. 75—Pet-45.
McFarland, B. L.
see **Galluzzo, N. G.**
McFarland, E. R.
see **Tabakoff, W.**
McGowan, J. G.
see **Cloutier, P. D.**
McHugh, J. D.
Seal Development for Large, Submersible Electric Motors. 75—LUB-17.
McInerney, P. F.
Generating Station Turbine Rotors: Prime Movers or Scrap? 75—PEM-10.
McKechnie, R. E. and Stricker, P. A.
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications. 75—WA/OCE-13.
McKechnie, R. E.
The Engineering Case Study as an Aid to Career Advancement. 75—DE-19.
Macken, N. A., Scheideman, F. C. and Jacobs, M. L.
An Experimental Study of Pressure Drop and and Liquid Transport of Oil-Refrigerant Mixtures. 75—WA/HT-26.
McLean, A. F.
Development Progress on Ceramic Turbine Stators and Rotors. 75—GT-111.
McMillan, R. E.
see **Heap, M. P.**
McMullen, J. C.
see **Baker, J. M.**
McSweeney, T. B.
see **Willcutt, G. J. E.**
Maddux, K., Brown, D. and Schierloh, F.
Design of Chatter Free Machine Tools. 75—DET-5.
Madeheim, H.
Product Safety. 75—SAF-1.
Maiden, D. E.
see **Ferriter, N.**
Mak, S. W. and Botman, M.
Substructure Analysis of Impeller Vibration Modes. 75—DET-112.
Makins, J. E.
see **Ewing, R. D.**
Mamoun, M. M.
Effects of Friction on Load and Moment Variation and Efficiency of Spur Gears - Part 1: Contact Ratio Equal to One. 75—DE-63.
Mamoun, M. M.
Effects of Friction on Load and Moment Variation and Efficiency of Spur Gears - Part 2: Contact Ratio Between One and Two. 75——DE-64.
Mamoun, M. M.
On the Theories of Friction of Solids - Part 1: A Review of Recent Theories. 75—DE-8.
Mamoun, M. M.
On the Theories of Friction of Solids - Part 2: A Theory for Predicting Friction Between Contacting Solids. 75—DE-9.
Mamoun, M. M.
On the Theories of Friction of Solids - Part 3: Analytical Methods to Determine Frictional Resistance. 75—DE-10.
Mangano, G. J. and DeLucia, R. A.
Rotor Burst Protection Program: Statistics on Aircraft Gas Turbine Engine Rotor Failures That Occurred in U. S. Commercial Aviation During 1973. 75—GT-12.
Mangione, B. J. and Petkovsek, J. C.
Economics Favor Industrial Power Generation with Steam From High Presssure Boilers. 75—IPWR-5.
Mann, L.
Plant Maintenance Needs an Annual Report. 75—PEM-4.
Mann, W. E.
see **Khasnabis, S.**
Manna, M. C., Doering, H. von E., and Patterson, J. R.
Experience and Application of Gas Turbine Inlet Air Filters. 75—GT-105.
Manning, M. P. and Reid, R. C.
Carbon Dioxide Reduction by the Bosch Process. 75—ENAs-22.
Manns, B. H.
Utilization of Technology for Environmental Monitoring. 75—ENAs-6.
Manos, W. P.
Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Card and Equipment. 75—WA/RT-6.
Manos, W. P.
see **Raidt, J. B.**
Margolis, R. L.
see **Potter, J. H.**
Marinelli, V., Gaspari, G. P., Greco, G. and Lucchini, F.
Dryout Experiments in a 16-Rod BWR Geometry with Six Different Radial Heat Flux Distributions. 75—HT-24.
Markham, D. M. and Lewis, C. H.
A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel. 75—WA/HT-65.
Markley, R. A.
see **Carelli, M. D.**
Markley, R. A.
see **Vegter, B. J.**
Markstein, G. H.
Radiative Energy Transfer from Turbulent Diffusion Flames. 75—HT-7.
Marseilles, L.
The Impact of New Technology on Existing Maintenance Organizations. 75—PEM-16.
Marshek, K. M., Gartner, J. R. and O'Brien, R. C.
Dispersion Representation of Warpage in Machine Parts. 75—DE-24.
Martin, G. C. and Tse, Y. H.
Parametric Studies on a Railroad Freight Car Mathematical Model. 75—WA/RT-11.
Martin, H. R. and Zanetel, G.
Electrosensitive Fluid Characteristics Under a Pulsatory Electric Field. 75—DE-62.
Martin, J. R.
Unit Trains - A Tool for Improved Service and Profit. 75—ICT-1.
Martindale, W. R.
see **Smith, R. V.**
Mas, P. A.
see **Sullivan, D. A.**
Mascenik, W. M.
see **Mercer, J. L.**
Mason, D., Wilson, M. P. and Birkhead, W. G.
Measurement Error to the Bending of Orifice Plates. 75—WA/FM-6.
Masuda, S., Ariga, I. and Watanabe, I.
Uniform Shear Flow within Rectangular Parallel-Walled Diffusers. 75—FE-34.
Mathey, C. J.
The Management of Product Planning. 75—WA/Mgt-6.
Matzner, B.
see **Nixon, R. B.**
Maxwell, R. L.
Bringing Design Education and Industry Together. 75—DE-37.
Mehta, B. M.
see **Ahlert, R. C.**
Mellen, D. M.
see **Mitchell, L. D.**
Mello, R. M. and Scheller, J. D.
Simplified Inelastic (Plastic and Creep) Analysis of Pipe Elbows Subjected to In-plane and Out-of-Plane Bending. 75—PVP-62.
Menant, B.
see **Lafay, J.**
Merati, J. K.
see **Ayorinde, O. A.**
Mercer, J. L. and Mascenik, W. M.
UTS: Accelerating Public Sector Technology Utilization. 75—WA/Aero-2.
Merchant, H. C., Sergev, S. S. and Orr, W. A.
Development of a Response Monitoring System and Application to a Barge. 75—WA/OCE-110.
Meredith, O. M.
see **Gee, S.**
Merony, R. N.
see **Anyiwo, J. C.**
Metcalfe, A. G.
see **Rose, F. K.**
Metz, S. A.
see **Hettche, L. R.**
Meulemeester, E. De
see **Hoppe, N.**
Michaud, G. H. and Modrey, J.
A Designer-Augmented Optimization Strategy: Concept and Implementation. 75—DET-99.
Michaud, G. H. and Modrey, J.
A Direct Search Algorithm for Constrained Nonlinear Design Optimization. 75—DET-100.
Mihalasky, J.
Design-To-Cost versus Design-To-Customer-Requirements versus Design-For-Safe-Operation: Is There a Conflict? 75—SAF-2.
Milay, J. S.
see **Powell, J. R.**
Miles, D. D.
see **Fowlie, D. W.**
Miletti, D. L.
see **Watkinson, A. P.**
Miller, F. G.
Computerized Maintenance Management System. 75—PEM-20.
Miller, H. H. and Gartner, J. R.
Tunable, Non-Linear Vibration Absorber. 75—DET-9.
Miller, T. W.
The Surface Heat Balance in Simulations of Permafrost Behavior. 75—WA/HT-86.
Miller, W. H., Cherry, C. C. and Butler, D. J.
Role of Silica- and Quartz-Phenolics in Ramjet Nozzles. 75—ENAs-52.
Milligan, M. W.
see **Edmondson, A. J.**
Mims, W. E. and Yang, T. H.
Investigation of a Torsionally Flexible Freight Car. 75—WA/RT-13.
Minich, M. D.
see **Chamis, C. C.**
Minty, A. G.
see **Brown, A.**
Mirza, S. and Setiawan, B.
Free Vibration of Two Span Rectangular Plates. 75—WA/PVP-25.
Mitchell, J. W.
see **Freeman, T. L.**
Mitchell, L. D. and Mellen, D. M.
Torsional-Lateral Coupling in a Geared, High-Speed Rotor System. 75—DET-75.
Mizuki, S., Ariga, I. and Watanabe, I.
A Study on the Flow Mechanism within Centrifugal Impeller Channels. 75—GT-14.
Moats, E. R.
Operating Experience with a Tire-Fired Boiler. 75—IPWR-10.
Mobbs, F. R.
see **Warda, H. A.**
Modell, M.
see **Amin, S.**
Modrey, J.
see **Michaud, G. H.**
Moffat, R. J.
see **Crawford, M. E.**
Moffat, J. D.
New Metal Impregnation Technology Solves Friction and Corrosion Problems. 75—PEM-17.
Mohan, D.
The Interdisciplinary Approach in the Teaching of Technology-Society Courses. 75—WA/TS-1.
Mohindra, D.
see **Karim, G. A.**
Mollendorf, J. C. and Chu, T-Y.
Transient Film Condensation on Finite Horizontal Surfaces with Run-Off. 75—HT-16.
Mon, G.
A Flueric Laminar Operational Amplifier Scaler. 75—WA/Flcs-3.
Montgomery, L. D.
see **Williams, B. A.**
Montgomery, W. O. and Lemezis, S.
An Advanced Coal Gasification System for Electric Power Generation. 75—Pwr-6.
Moodey, J. C.
see **Toepel, F. P.**
Moon, S.
see **Dooher, J.**
Moore, A.
Gas Turbine Engine Internal Air Systems: A Review of the Requirements and the Problems. 75—WA/GT-1.
Morel, T.
Comprehensive Design of Axisymmetric Wind Tunnel Contractions. 75—FE-17.
Moretti, P. M. and Lowery, R. L.
Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes. 75—PVP-47.
Moretti, P. M., Lowery, R. L. and Withers, J. G.
Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes. 75—WA/HT-14.

Morgan, G. W.
Dynamic Analysis of Deep Water Risers in Three Dimensions. 75—Pet-20.
Morgan, M. J.
Position Control of Pipelay Barges. 75—WA/Aut-18.
Moriarty, K. J.
see **Buschman, H. W.**
Morris, A. W. H. and Hoare, R. G.
Secondary Loss Measurements in a Cascade of Turbine Blades with Meridonal Wall Profiling. 75-WA/GT-13.
Morris, R. D.
see **Blade, P. K.**
Morrone, T.
see **Dooher, J.**
Moses, H. L.
see **Weikert, W. F.**
Mosier, J. A.
Developing Long-Term Personal Worth. 75—DE-4.
Motley, K. W.
see **Hill, K. W.**
Moyle, I. N.
see **Kurtz, E. F.**
Mucoglu, A. and Chen, T. S.
Combined Force and Free Convection on a Vertical Cylinder With Uniform Surface Heat Flux. 75—HT-18.
Muhlbaier, D. R.
Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup. 75—WA/HT-30.
Muju, M. K. and Ghosh, A.
Effect of Magnetic Field on Wear. 75—PTG-5.
Mulholland, G. P., Gupta, B. P. and San Martin, R. L.
Inverse Problem of Heat Conduction in Composite Media. 75—WA/HT-83.
Mumford, S. E.

see **Holden, A. N.**
Mumford, W.
see **Czapski, U. H.**
Murad, P. A.
see **Gonzalez, J. I.**
Murphy, J. C.
see **Schuller, M. R.**
Musick, J. K. and Williams, F. W.
Catalytic Decomposition of Halogenated Hydrocarbons with Hopcalite Catalyst. 75—ENAs-17.

N

Nagata, O.
see **Shiraki, K.**
Nagel, D. J.
see **Bleach, R. D.**
Nagumo, G. and Fiala, C.
Predictions of the Plastic Deformation of a Fluid-Filled Pipe by a Reactor Containment Code. 75—PVP-22.
Nair, E. V.
see **Venuvinod, P. K.**
Nakajima, I., Kawada, A., Fukuda, K. and Kobori, T.
An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line. 75—WA/HT-20.
Nason, J.
see **Trusch, R. B.**
Nathan, G. K.
A Study on the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines. 75—WA/FE-18.
Neidlinger, J.
see **Salvador, M. S.**
Neill, J. S. and Gibbons, J. H.
Sizing a Cooling Pond for a Power Plant. 75—WA/HT-63.
Nelson, A. W.
see **Wells, M. K.**
Nelson, N. W.
see **Kraus, H.**
Nelson, R. T.
see **Stewart, R.**
Nevendorf, D. W.
see **Jacko, R. B.**
Newhouse, T. C. and Pavelic, V.
Determination of Moment-of-Inertia by Experimental Methods. 75—DE-29.
Nichols, J. B.
New Products and the Future. 75—WA/Mgt-4.
Nick, C. F.
Multi-Turbine Controls for a Gas Storage System. 75—GT-104.
Niino, T.
see **Shimogo, T.**
Niskodé, P. M.
see **Heymann, F. J.**
Nixon, R. B., Matzner, B. and Lahey, R. T.
The Effect of Reduced Clearance and Rod Bow on Critical Power in Full-Scale Simulations of 8X8 BWR Fuel. 75—HT-69.
Noerager, J. A. and Greer, J. B.
An Investigation of Coupled Tubing Joints for Sour Service. 75—Pet-34.
Norton, D. M., Gorzegno, W. P. and Breen, B. P.
Modifications to Ormond Beach Steam Generators for NOx Compliance. 75—WA/Pwr-9.
Novak, G. E. and Eck, B. J.
Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads. 75—WA/RT-5.
Nuccio, P. P.
see **Reveley, W. F.**

O

Oberlander, G.
see **Croix, L. de la**
Obidinsky, E. S.
see **Carl, D. E.**
O'Brien, R. C.
see **Marshek, K. M.**
O'Brien, R. C.
Rice, S. L.
O'Brien, R. J.
Avoiding Pitfalls of Complex Engineering Programs. 75—DE-45.
O'Dea, D. M.
Experience with Computerized Machinery Vibration Analysis. 75—Pet-21.
Odgers, J. and Son, N. N.
Film Cooling - The Effect of a Cold Jet Normal to the Coolant Layer. 75—WA/GT-4.
Odgers, J. and Coban, A.
Film Cooling: The Effect of Velocity Variation in the Slot. 75—WA/GT-20.
Odgers, J. and Wojcikowski, K. A.
Jet Mixing as Defined by Water Models. 75—WA/GT-2.
O'Donoghue, J. K.
see **Pai, D. H.**
Offner, D. H.
Determination of Pivot Locus for Pivoted Motor Belt Drives. 75—WA/DE-29.
Offner, W. W.
Nuclear Power Plant Construction and the Public Safety. 75—WA/TS-5.
O'Hara, J. B.
see **Loran, B. I.**
Okamura, H. and Suzuki, Y.
An Experimental Study of Sound-Damping Rings for Gears - Dynamical Behavior and Optimum Design Parameters for Sound-Damping Rings. 75—DET-4.
Olcott, T. M.
Design Fabrication and Evaluation of a Trace Containment Control System. 75—ENAs-23.
Olson, C. A. and Bowman, L. H.
Three-Dimensional Thermal Effects in PWR Fuel Rods. 75—WA/HT-78.
Olson, C. A.
see **Hellman, J. M**
Onal, H. F.
A New Development of Direct-Coupled Gas-Turbine Driven, High-Speed Centrifugal Pump. 75—DE-36.
O'Neil, P. L. and Tupper, G. P.
Recent Trends in Steam Turbine Generator Maintenance. 75—PEM-14.
Oosthuizen, P. H. and Cheung, T.
Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces. 75—WA/HT-54.
Oosthuizen, P. H. and Rush, C. K.
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation. 75—WA/HT-87.
Oravetz, A. W.
see **Oyler, J. F.**
Orr, W-A.
see **Merchant, H. C.**
Ott, W. R.
see **Fletcher, L. S.**
Owen, W. F.
see **Slechta, A. F.**
Owens, W. L.
see **Ward, C. F.**
Oyler, J. F. and Oravetz, A. W.
Adaptation of Stacker/Reclaimer Design Concepts to Suit the Availability of Material in Foreign Countries. 75—MH-2.

P

Pagano, L.
Review of the Office of Technology Assessment Activities. 75—WA/TS-4.
Pai, D. H., O'Donoghue, J. K. and Stenner, J. R.
Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems. 75—Pwr-16.
Pai, D. H. and Hsu, M. B.
Inelastic Analysis of Tubesheets by the Finite Element Method. 75—PVP-57.
Palcza, J. L.
see **Barron, W. A.**
Palmer, R. S.
see **Stauffer, T. R.**
Paluszny, A.
Designing with High Temperature Ceramics. 75—DE-28.
Pan, S. C.
see **Soo, S. L.**
Pan, Y. S., Anderson, T. L. and Skopp, G. H.
Three-Dimensional Stress Analyses of Mitered Elbows. 75—PVP-54.
Panarelli, J. E.
A Beam Analogy in the Limit Analysis of Open Cylindrical Shells. 75—WA/PVP-4.
Pandey, P. C.
see **Vajpayee, S.**
Pang, Y.
see **Chung, B. T. F.**
Panjabi, M. M., White, A. A., Keller, D., Southwick, W. O. and Friedlaender, G.
Clinical Biomechanics of the Cervical Spine. 75—WA/Bio-7.
Paret, R. and Fox, R. B.
New Opportunities in High-Strength Low-Alloy Steels - One Answer to the Search for Lower Product Weight and Material Conservation. 75—DE-38.
Park, W. H.
see **Wambold, J. C.**
Parkman, M. F., Watson, F. H. and Whipple, J. C.
Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator. 75—Pwr-19.
Parsons, W W.
see **Fedor, O. H.**
Paschkis, V.
Ethics in Engineering. 75—TS-3.
Passalacqua, J. R.
Trends™ - An Automatic Gas Turbine Diagnostic System. 75—GT-82.
Passerello, C. E.
see **Abdelnour, T. A.**
Patel, A. S.
see **Baker, J. M.**
Patel, Y. A., Cho, F. L. and Dimopoulos, A. P.
Slipping Pipe Anchor - A Novel Design for Piping in High Seismic Intensity Zones. 75—PVP-58.
Patrick, J. W.
see **Alton, L. R.**
Patterson, J. R.
Operating and Maintenance Experience for Base Load Gas Turbines Using Heavy Fuels - A Case Study. 75—GT-74.
Patterson, J. R.
see **Manna, M. C.**
Patterson, R. C.
The Combustion Engineering Coal Gasification Program. 75—Pwr-8.
Patterson, W. N.
Recognition and Reduction of Hearing Damage Risk During Farm Operations. 75—WA/SAF-3.
Paulus, H. J.
see **Schaller, R. E.**
Pavelic, V. and Pourian, R.
Computer Analysis of Double Universal Joints. 75—DE-34.
Pavelic, V.
see **Newhouse, T. C.**
Payne, D.
The Gravity Structure: Its Merits and Economics. 75—WA/OCE-9.

Peacy, J.
A Psychrometric Method for Determining Water Vapor in Flue Gas. 75—WA/APC-8.
Pearsall, G. W.
What a Manager Must Know About Materials or Materials in Design: Engineering Properties, Economics, and Environmental Impact. 75—DE-56.
Pechersky, M. J.
see **Vegter, B. J.**
Pellegrin, J. D.
see **Sneckenberger, J. E.**
Pelton, H. K.
see **Storment, J. W.**
Perham, R. E.
see **Yen, Y. C.**
Perkins, D. E. and Wood, J. E.
The Design and Selection of Pneumatic Conveying Systems. 75—MH-1.
Peterson, P. D.
ALSA Malfunction Simulator Evolution. 75—ENAs-38.
Petkovsek, J. C.
see **Mangione, B. J.**
Pfefferle, W. C., Carruba, R. V., Heck, R. M. and Roberts, G. W.
CATATHERMAL Combustion: A New Process for Low-Emissions Fuel Conversion. 75—WA/Fu-1.
Pfundstein, K. L.
Industry's Obligation in Designing for Product Safety. 75—DE-17.
Phillips, C. F. and Kooyman, O. J.
Engineering/Biological Evaluation of the Work Environment. 75—WA/SAF-4.
Phillips, W. F. and Cook, R. D.
Natural Circulation from a Flat Plate Collector to a Hot Liquid Storage Tank. 75—HT-53.
Pickard, J. G.
see **Khasnabis, S.**
Pier, J. R. and Foster, J. L.
The American Turboliner. 75—GT-108.
Pierce, A. D.
Assessment of Possible Methods of Controlling the Anomalous Vibrations of Rotating Wire Stranding Machinery. 75—DET-8.
Pierce, A. D.
see **Johnson, G. E.**
Pierce, F. E. and Turner, L. D.
OWS Refrigeration System Computer Model. 75—WA/HT-10.
Pillsbury, P. W. and Lin, S. S.
Parametric Tests on Dual-Fuel Coal Gas/ Distillate Oil Gas Turbine Combustors. 75—Pwr-13.
Pimentel, K. D. and Brewer, J. W.
Toward a Mathematical Theory of Environmental Monitoring. 75—WA/Aut-7.
Pitrolo A. A.
see **Byam, J. W.**
Plessis, M. P. du
see **Tsang, S.**
Pletta, D. H.
Ethical Codes - Enforcement versus Obedience? 75—TS-6.
Plost, M.
see **Basiulis, A.**
Pogson, J. T.
see **Walker, J. R.**
Polhamus, G. D. and Welch, A. J.
Threshold Lesion Temperatures in Argon Laser-Irradiated Rabbit Eyes. 75—HT-13.
Pollmann, E. and Termuehlen, H.
Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl). 75—WA/Pwr-11.
Pons, R. L. and Clark, T. B.
Conceptual Design of a Maglev HSGT System. 75—ICT-2.
Poppendiek, H. F. and Sabin, C. M.
Some Heat Transfer Performance Criteria for High Temperature Fluid Systems. 75—WA/HT-103.
Portier, J. J. and Arnas, O. A.
Analytical Study of Transient Heat Conduction in Composite Regions of Arbitrary Shape. 75—HT-27.
Potter, J. H. and Margolis, R. L.
Calculated First Critical Speeds in Process Steam Turbines. 75—WA/PID-8.
Potter, R. C. and Sawley, R. J.
Valves and Valve Installations as Low Noise Packages. 75—DE-41.
Pourian, R.
see **Pavelic, V.**
Powe, R. E., Scanlan, J. A. and Eyler, L. L.
Flow Studies for Natural Convection Between a Sphere and Its Cubical Enclosure. 75—HT-61.
Powell, J.
see **Fillo, J. A.**
Powell, J. D.
see **Hubbard, M.**
Powell, J. R., Salzano, F. J., Yu, W-S. and Milau, J. S.
High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants. 75—WA/Ener-2.
Prabhakar, R., Citron, S. J., and Goodson, R. E.
Optimization of Automotive Engine Fuel Economy and Emissions. 75—WA/Aut-19.
Presta, G.
see **Class, C. R.**
Prince, D. C., Wisler, D. C. and Hilvers, D. E.
A Study of Casing Treatment Stall Margin Improvement Phenomena. 75—GT-60.
Pritchard, J. J.
see **Scerbo, F. A.**
Prinka, T.
Contemporary Problems in the Development of Low-Alloy Heat-Resistant Steels. 75—PVP-46.
Pundyk, J. M.
see **Rozenman, T.**
Putnam, A. A.
Combustion Noise in Industrial Burners. 75—WA/Fu-5.

Q

Quaka, T. E.
Dresden Station Liquid Radwaste System Modifications. 75—Pwr-26.
Quattrone, P. D.
see **Schubert, F. H.**
Quinn, W. F.
see **Yen, Y. C.**

R

Rabas, T. J. and Eckels, P. W.
Heat Transfer and Pressure Drop Performance of Segmented Extended Surface Tube Bundles. 75—HT-45.
Radway, J. E. and Exley, L. M.
A Practical Review of the Cause and Control of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers. 75—WA/CD-8.
Raghunathan, S. and Kar, S.
Performance Characteristics of Pump Inlets. 75—FE-23.
Rago, C.
see **Sernas, V.**
Ragsdell, K. M.
see **Gabriele, G. A.**
Ragsdell, K. M.
see **Schuldt, S. B.**
Rahaim, T. J.
see **Sanday, S. C.**
Raidma, J. K.
Project Management - The Computer as a Tool for Managing a Major Construction or Repair Project. 75—PEM-9.
Raidt, J. B., Manos, W. P. and Johnstone, B.
Vertical Motions During Railcar Impacts. 75—WA/RT-10.
Ramachandra, K. and Lingaiah, K.
Correction Factors for Plate Theories Applied to Tooth Deflection Problem in Wildhaber-Novikov Gears. 75—DE-59.
Ramachandra, K.
see **Lingaiah, K.**
Ramm, H. and Johannsen, K.
Evaluation of Intersubchannel Heat Transport in Bare Liquid-Metal Cooled Rod Arrays of Equilateral Triangular Arrangement. 75—HT-32.
Rapp, I. H., Smith, C. V. and Simitses, G. J.
Dynamic Snap- Through Buckling of Shallow Arches with Nonuniform Stiffness. 75—DET-41.
Rasmussen, M. L.
On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients. 75—WA/HT-53.
Rath, U. K.
Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Nuclear Power Plant. 75—WA/PVP-6.
Ravuri, R. and Tabakoff, W.
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate. 75—WA/HT-106.
Rayner, H. M.
see **Kratochvil, J. A.**
Reboux, J.
see **Fabri, J.**
Redd, F. J. and Andersen, B. W.
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis. 75—WA/Flcs-5.
Reed, C. and Wambold, J. C.
Use of a Paddle Wheel in the Recovery of Floating Oil. 75—ENAs-48.
Reed, C. L.
see **Kuhre, C. J.**
Reid, R. C.
see **Amin, S.**
Reid, R. C.
see **Manning, N. P.**
Reis, G. E.
see **Blackwell, B. F.**
Reveley, W. F. and Nuccio, P. P.
Design and the Parametric Testing of the Space Station Prototype Integrated Vapor Compression Distillation Water Recovery Module. 75—ENAs-37.
Reynolds, B. L. and Holmes, R. E.
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge. 75—WA/HT-18.
Ribando, R. J. and Torrance, K. E.
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions. 75—WA/HT-73.
Riberio, M. M. and Whitelaw, J. H.
Turbulent Mixing of Co-Axial Jets with Particular Reference to the Near-Exit Region. 75—FE-36.
Rice, S. L., Wayne, S. F. and Shapiro, N. P.
Cryogenic Process Removal of Insulation from Electrical Wire. 75—WA/PID-7.
Rice, S. L., Field, M. P. and O'Brien, R. C.
Hybrid Urban Vehicle. 75—DE-61.
Richardson, E. M.
see **Chatas, A. T.**
Rickett, D. A.
see **Winkler, J. E.**
Ridler, W.
Borescope Photographic Techniques Developed for Marine Gas Turbine Engines. 75—GT-119.
Rimbey, D. H. and Kovacs, S. G.
The Design and Development of a Magnetic Heart Pump. 75—WA/Bio-9.
Roberts, C. C.
Infrared Temperature Measurement Applied to Engineering Design Analysis. 75—WA/TM-3.
Roberts, G. A. and Branstetter, R. L.
A Statistical Monitoring Concept for Reliability Improvement. 75—DET-130.
Roberts, G. W.
see **Pfefferle, W. C.**
Rodgers, C.
Small Gas Turbine Auxiliary Power Units. 75—ENAs-1.
Roe, K. K.
see **Andonedis, A.**
Roessner, J. D.
Federal Technology Transfer: Results of a Survey of Formal Programs. 75—WA/Aero-4.
Rogers, J. T. and Tahir, A. E. E.
Turbulent Interchange Mixing in Rod Bundles and the Role of Secondary Flows. 75—HT-31.
Rogo, C.
see **Due, H. F.**
Rohsenow, W. M.
see **Iloeje, O. C.**
Roidt, M.
see **Vegter, B. J.**
Rollins, J.
see **Desai, P.**
Root, R. R.
see **Schuldt, S. B.**
Rose, F. K. and Metcalfe, A. G.
Isothermal Shape Rolling of Airfoil Sections for Gas Turbines. 75—GT-52.
Rosen, S. S.
Air Quality Considerations in Environmental Planning. 75—WA/APC-12.
Ross, B., Tetelman, A. S. and Benoit, M.
Analysis of Failures Experienced in a Horizontal Shell Direct Fired Petroleum Heater Operated in Alaska. 75—DET-131.

Rossi, S. and Klop, C.
Propulsion Power Plants for Large Icebreakers with Special Reference to Gas Turbine Applications. 75—GT-120.
Roulston, G. H.
see **Eisenstadt, R.**
Rowan, W. J. and Winkleblack, R. K.
LMFBR Hardware and Commercial Standards. 75—WA/NE-6.
Rozalowski, G. R. and Gater, R. A.
Pressure Loss and Heat Transfer Characteristics for Highly Viscous Fluid Flow in Convoluted Tubing. 75—HT-40.
Rozenman, T. and Pundyk, J. M.
Natural Draft Performance of Air Cooled Heat Exchangers. 75—WA/HT-38.
Rubins, P. M.
see **Leonard, D. A.**
Rudinger, G.
Some Aspects of Gas-Particle Jets in a Cross Flow. 75—WA/HT-5.
Rush, C. K.
see **Oosthuizen, P. H.**
Rust, J. H. and Boyle, D. R.
Heat Conduction Analysis of Composite Nuclear Fuels. 75—HT-30.
Ruttner, L. E. and Wright, J. P.
Design of a Heat Pipe Governed Thermal Control System for the Solar Electric Propulsion Stage (SEPS). 75—ENAs-53.

S

Sabin, C. M.
see **Poppendiek, H. F.**
Sacher, E.
see **Engel, P. A.**
Sacks, P. S.
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube. 75—WA/HT-24.
Safwat, H. H.
Water Column Separation and Cavitation in Short Pipelines. 75—FE-33.
Saheb, R. E.
see **Bui-quoc, T.**
Saintsbury, J. A. and Sampath, P.
Emissions Research on a Simple Variable Geometry Gas Turbine Combustor. 75—WA/GT-12.
Salahuddin, A.
see **Fazio, P. P.**
Salvador, M. S. and Neidlinger, J.
A Prototype Simulation Model of U.S. Maritime Transportation of Bulk Commodities. 75—ICT-14.
Salzano, F. J.
see **Powell, J. R.**
Sampath, P.
see **Saintsbury, J. A.**
Sand, M. E.
see **Smith, C. R.**
Sanday, S. C., Lam, T. L., and Rahaim, T. J.
Design and Analysis of a Ceramic Stator Vane. 75—GT-100.
Sander, G. R.
Preventive Maintenance. 75—PEM-13.
Sandgren, E.
see **Schuldt, S. B.**
Sanesi, N. L.
see **Todd, D. M.**
San Martin, R. L.
see **Mulholland, G. P.**
Santoleri, J. J.
Energy Recovery from Low Heating Value Industrial Waste. 75—IPWR-13.
Sarau, R. W.
Supercritical Unit Availability Six-Year Case History. 75—Pwr-25.
Sauer, R. L.
see **Fogal, G. L.**
Sauer, R. L.
see **Walsh, J. M.**
Savery, C. W.
Counter-Flow Evaporative Cooling Tower Performance Modeling Verification. 75—WA/HT-43.
Sawley, R. J.
Acoustical Energy Decay in Piping Systems. 75—WA/Pet-6.
Sawley, R. J.
see **Potter, R. C.**
Sawyer, R. H.
see **Aburomia, M. M.**
Sayed, R. K. A.
Piping Seismic Restraint Spacing Criteria—An Approach to the Optimization of the Use of Seismic Restraints. 75—PVP-51.
Scanlan, J. A.
see **Powe, R. E.**
Scerbo, F. A. and Pritchard, J. J.
Fault Tree Analysis: A Technique for Product Safety Evaluation. 75—SAF-3.
Schaeper, A. W.
see **Kakarala, C. R.**
Schaller, R. E., Sedoff, R. T. and Paulus, H. J.
A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution. 75—WA/APC-4.
Scheele, L.
see **Stein, P. G.**
Scheidman, F. C.
see **Macken, N. A.**
Scheller, J. D.
see **Mello, R. M.**
Schill, G.
see **Grieb, H.**
Schimmel, W. P., Beck, J. V. and Donaldson, A. B.
Effective Thermal Diffusivity for a Multi-Material Composite Laminate. 75—WA/HT-90.
Schimming, P.
see **Starken, H.**
Schmitt, G. F.
Impact Erosion - A Serious Environmental Threat to Aircraft and Missiles. 75—ENAs-45.
Schmitt, R. C.
see **Sha, W. T.**
Schmunar, K. L.
Vibratory Wear of Fuel Rods. 75—WA/HT-79.
Schneck, D. J.
see **Walburn, F. J.**
Schneider, G. E.
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates. 75—WA/HT-95.
Schneider, G. E.
see **Yovanovich, M. M.**
Schneider, G. E., Strong, A. B. and Yovanovich, M.M.
A Physical Approach to the Finite Difference Solution of the Conduction Equation in Orthogonal Curvilinear Coordinates. 75—WA/HT-94.
Schneider, R. W. and Waters, E. O.
Some Considerations Regarding the Analysis of Part BT Code Flanges - 1974. 75—PVP-48.
Schoeneck, K. A. and Hornschuch, H.
Design Concept of a High Speed-High Pressure Ratio Centrifugal Compressor. 75—Pet-4.
Schreiber, E. T.
Construction Quality Control. 75—PEM-15.
Schrider, L. A. and Fischer, D. D.
In Situ Coal Gasification - A Unique Means for Energy Recovery. 75—PVP-44.
Schriempf, J. T.
see **Hettche, L. R.**
Schrock, V. E., Trezek, G. J. and Keilman, L. R.
Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink. 75—WA/HT-41.
Schroeder, E. C.
see **Holster, J. L.**
Schubert, F. H., Wynveen, R. A., Jensen, F. C. and Quattrone, P. D.
Development of an Advanced Static Feed Water Electrolysis Module. 75—ENAs-30.
Schuldt, S. B., Gabriele, G. A., Root, R. R., Sandgren, E. and Ragsdell, K. M.
Application of a New Penalty Function Method to Design Optimization. 75—DET-102.
Schuller, M. R., Murphy, J. C. and Glasser, K. F.
LNG Storage Tanks for Metropolitan Areas. 75—Pet-19.
Schulze, F. W.
see **Baker, P. H.**
Schuster, J. R.
see **Vrable, D. L.**
Schwartzbarth, H.
see **Douty, R. A.**
Scipione, J. P.
The Pros and Cons of Contract Maintenance. 75—PEM-3.
Scott, C. J.
see **Kuzay, T. M.**
Scott, V. D.
see **Blum, E.**
Scott, W. R.
New Products Through Acquisition. 75—WA/Mgt-3.
Sedoff, R. T.
see **Schaller, R. E.**
See, G. G., Bodo, C. A. and Glennon, J. P.
Research and Development of an Electrochemical Biocide Reactor. 75—ENAs-33.
Seitelman, L. H.
see **Dennis, A. J.**
Sengupta, S. and Greber, I.
Some Experiments on Laminar Wall Jets. 75—WA/Flcs-7.
Sephton, H. H.
Vertical Tube Evaporation with Double Fluted Tubes and Interface Enhancement. 75—HT-43.
Sephton, H. H.
see **Fong, H. L.**
Sergev, S. S.
see **Merchant, H. C.**
Sernas, V., Fletcher, L. S. and Rago, C.
An Interferometric Study of Natural Convection in Rectangular Enclosures of Aspect Ratios Less Than One. 75—HT-63.
Setiawan, B.
see **Mirza, S.**
Setogawa, S.
see **Shimogo, T.**
Sha, W. T., Schmitt, R. C. and Huebotter, P. R.
Boundary-Value Thermal-Hydraulic Solution in a Reactor Bundle. 75—HT-48.
Shah, R. K.
Perforated Heat Exchanger Surfaces. Part 1 - Flow Phenomena, Noise and Vibration Characteristics. 75—WA/HT-8.
Shah, R. K.
Perforated Heat Exchanger Surfaces. Part 2 - Heat Transfer Flow Friction Characteristics. 75—WA/HT-9.
Shapiro, N. P.
see **Rice, S. L.**
Sharma, C. P.
see **Gupta, C. P.**
Sharma, M. P.
see **Crowe, C. T.**
Sharma, S. P.
see **Dasgupta, S.**
Shaw, H.
The Effect of Water on Nitric Oxide Production in Gas Turbine Combustors. 75—GT-70.
Shaw, W. J. D.
see **Lemay, I.**
Sheehan, R. G.
Methanol or Ammonia from Garbage: A Case Study in Technology Transfer. 75—ENAs-10.
Sheinbaum, I.
Direct Contact Heat Exchangers in Geothermal Power Production. 75—HT-52.
Sherlock, J. E.
see **Klosterman, A. L.**
Sherman, A. M. and Landgraf, R. W.
Materials Selection for Fatigue Reliability. 75—DE-43.
Shierloh, F.
see **Maddux, K.**
Shimogo, T., Niino, T. and Setogawa, S.
Coupled Vibration of Elastic Circular Bars in Viscous Fluid. 75—DET-76.
Shiraki, K., Honma, T. and Nagata, O.
The Penstock Vibration Characteristics - On the Vibrations of Simply Supported and Ring-Stiffened Cylindrical Shel's filled with Pressurized Water. 75—DET-114.
Shirazi, M. A. and Davis, L. R.
The Characteristics of Thermal Plumes. 75—WA/HT-64.
Shumsky, R. V.
see **Subbotin, V. I.**
Siddall, J. N.
Codification of Values in Design. 75—DET-109.
Siddall, J. N.
Some Practical Problems in Optimization. 75—DET-107.
Silvers, R. S.
see **Amero, R. C.**
Simitses, G. J.
see **Rapp, I. H.**
Sines, G. and Adams, M.
The Use of Brittle Materials as Compressive Structural Elements. 75—DE-23.
Skop, G. H.
see **Pan, Y. S.**
Slechta, A. F. and Owen, W. F.
Capabilities of the ABF Process. 75—PEM-21.

Siegel, D. L. and Davis, L. R.
Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine. 75—WA/HT-84.
Sloan, D. and Farquhar, B. W.
The Refracting Inlet: A New Concept for Aircraft Inlet Noise Suppression. 75—GT-21.
Smalley, A. J.
see **Badgley, R. H.**
Smith, C. R., Sand, M. E. and Bendick, P. J.
Measurement of Prosthetic Valve Flow Behavior in a Steady Flow Simulator Using an LDV. 75—APMB-8.
Smith, C. V.
see **Rapp, I. H.**
Smith, D. A.
see **Blum, E.**
Smith, D. D.
Disposal of Dredged Material - A Key Environmental Consideration in the Construction of Major Nearshore and Coastal Marine Facilities. 75—WA/Pet-7.
Smith, P. R. and Gupta, B. P.
Simulation of Solar Heated Buildings. 75—WA/Sol-10.
Smith, P. R.
see **Cobble, M. H.**
Smith, R. N. and Greif, R.
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers. 75—WA/HT-56.
Smith, R. T. and Burton, C. E.
Effect of Wind Harmonic and Gust Torques on Induction Generators - Part 1. 75—WA/Pet-4.
Smith, R. V., Martindale, W. R. and Lindsted, R. D.
Two-Phase Sonic Velocity Measurements for Separated Flow. 75—WA/HT-34.
Smogalev, I. P.
see **Subbotin, V. I.**
Sneckenberger, J. E. and Pellegrin, J. D.
Nozzle Design for the Abatement of Blast Nozzle Noise. 75—DET-50.
Snoek, C. W. and Tarasuk, J. D.
Heat Transfer from Inflatable Structures. 75—WA/HT-97.
Snyder, R. Z.
The Navy Fighter Pilot Helmet Oxygen Mask Improvement Program. 75—ENAs-19.
Solbrig, C. W.
see **Lyczkowski, R. W.**
Solecki, R.
see **Durocher, L. L.**
Solinsky, K. S.
An Innovative Proposal for Personal Rapid Transit System. 75—ICT-15.
Sommerlad, R. E.
see **Heap, M. P.**
Son, N. N.
see **Odgers, J.**
Soo, S. L., Ferguson, J. A. and Pan, S. C.
Feasibility of Pneumatic Pipeline Transport of Coal. 75—ICT-22.
Soo, S. L.
Power Spray Cooling - Unit and System Performance. 75—WA/Pwr-8.
Sorenson, A.
Life Testing of Venicle Frames to Avoid Failure Under Service Conditions. 75—DET-126.
Sorensen, A.
Product Reliability Due to Random Load Variations at Elevated Temperature. 75—DET-129.
Southwick, W. O.
see **Panjabi, M. M.**
Spadaccini, L. J. and Szetela, E. J.
Approaches to the Prevaporized-Premixed Combustor Concept for Gas Turbines. 75—GT-85.
Sparks, B. E.
see **Hamilton, L. P.**
Speckhart, F. H. and Wright, D.
Balancing Slider-Crank Mechanisms. 75—DE-32.
Speckhart, F. H.
see **Edmondson, A. J.**
Spence, N. C., Kalasinsky, C. and Cramer, J. J.
An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant. 75—WA/APC-10.
Spotts, M. F.
The Combination of Uniform Probability Curves in Engineering. 75—DET-1.
Spotts, M. F.
Probability Theory for Assemblies with Piece Part Errors Concentrated Near End of Tolerance Limit. 75—DE-1.
Springer, E. K.
So I Have a Cross-Connection? What Is That???
Squarer, D.
An Approximate Solution to the Thermal Resistivity of a Cube Containing a Spherical Pore. 75—HT-28.
Standard, S. E.
see **MacAdam, W. K.**
Starken, H., Breugelmans, F. A. E. and Schimming, P.
Investigation of the Axial Velocity Density Ratio in a High Turning Cascade. 75—GT-25.
Stauffer, T. R., Wycoff, H. L. and Palmer, R. S.
An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor. 75—WA/NE-5.
Steele, B. L.
Selection of Plant Cooling Source(s). 75—IPWR-6.
Stegman, R. L.
see **Hettche, L. R.**
Stein, P. G. and Scheele, L.
The B-1 Environmental Control System. 75—ENAs-13.
Stein, Y. Y.
see **Subbotin, V. I.**
Steinmeyer, D.
see **Cunningham, R. G.**
Stenner, J. R.
see **Pai, D. H.**
Stepner, D. E. and Chen, T-S.
Digital Control of Finished Yield for the Textile Industry. 75—WA/Aut-15.
Stewart, A. E.
Development of Real Time High Energy X-ray Imaging System for Use in Dynamic Fluoroscopy of Aero Gas Turbines. 75—GT-117.
Stewart, J. E. and Herter, R.
Solid Radwaste Experience in Europe Using Asphalt. 75—Pwr-21.
Stewart, N. D.
see **Bailey, J. R.**
Stewart, R. and Nelson, R. T.
Weather Modification Due to Spray Pond Cooling. 75—HT-1.
Stock, D. E.
see **Crowe, C. T.**
Stocker, H. L.
Advanced Labyrinth Seal Design Performance for High Pressure Ratio Gas Turbines. 75—WA/GT-22.
Storment, J. W. and Pelton, H. K.
Meeting of OSHA Noise Criteria in a Central Utility Plant of a Large Manufacturing Facility. 75—WA/SAF-2.
Stribula, M. R.
see **Laessig, R. E.**
Stricker, P. A. and McKechnie, R. E.
Active-Passive Motion Compensation Systems for Marine Towing Applications. 75—WA/OCE-14.
Stricker, P. A.
see **McKechnie, R. E.**
Strong, A. B.
see **Schneider, G. E.**
Strong, A. B.
see **Yovanovich, M. M.**
Subbotin, V. I., Kirillov, P. L., Smogalev, I. P., Suvorov, M. Ya., Stein, Yu. Yu. Shumsky, R. V. and Shchikovsky, Yu. D.
Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm. 75—WA/HT-21.
Sullenberger, A. G.
see **Davis, G. M.**
Sullivan, D. A. and Mas, P. A.
A Critical Review of NOx Correlations for Gas Turbine Combustors. 75—WA/GT-7.
Sullivan, H. F.
see **Brzustowski, T. A.**
Sun, C. L.
see **Bertsch, O. L.**
Sung, L. Y. and Friedly, J. C.
A Procedure for Obtaining an Optimal Solution to the Municipal Solid Waste Recovery and Disposal Problem. 75—ENAs-29.
Suryanarayana, N. V.
see **Bosio, R. C.**
Suvorov, M. Y.
see **Subbotin, V. I.**
Suzuki, Y.
see **Okamura, H.**
Swift, R. A.
Research Tests. 75—Pet-47.
Synodis, S. T.
see **Flory, J. F.**
Szescila, A. J.
Techniques for Gravel Packing Abnormally Pressured Unconsolidated Reservoirs. 75—Pet-37.
Szetela, E. J.
see **Spadaccini, L. J.**

T

Tabakoff, W. and McFarland, E. R.
Gas Turbine Blade Heat Transfer with Rough Surfaces. 75—WA/HT-107.
Tabakoff, W.
see **Ravuri, R.**
Taber, J. J.
see **Diehl, R. C.**
Tahir, A. E. E.
see **Rogers, J. T.**
Taitel, Y. and Dukler, A. E.
A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow. 75—WA/HT-29.
Taitel, Y.
see **Dukler, A. E.**
Takata, H. and Tsukuda, Y.
Study on the Mechanism of Stall Margin Improvement of Casing Treatment. 75—GT-13.
Takeda, R.
A Design Method on Propeller Current Meters. 75—WA/FM-5.
Talbot, C. R. S., Tidbury, G. H. and Jha, S. K.
Identification of the Vibrational Modes of a Car Driven on the Road. 75—DET-115.
Talukder, N.
An Investigation of the Flow Characteristics in Arterial Branchings. 75—APMB-4.
Tarasuk, J. D.
see **Snoek, C. W.**
Tatom, J. W., Colcord, A. R., Knight, J. A., Elston, L. W. and Har-oz, P. H.
Clean Fuels from Agricultural and Forestry Wastes - The Mobile Pyrolysis Concept. 75—WA/HT-47.
Taylor, T. E.
see **Fowler, E. D.**
Teare, J. D.
see **Caledonia, G. E.**
Termuehlen, H.
see **Pollman, E.**
Terry, J. P., Harpel, W. L. and Graffeo, A. J.
Mechanical and Chemical Operating Problems of Gas Cleaning Systems. 75—WA/APC-11.
Tetelman, A. S.
see **Ross, B.**
Teyssandier, R. G.
Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles. 75—WA/FE-19.
Thomas, L. C.
see **Chung, B. T. F.**
Thomas, L. C.
see **Kakarala, C. R.**
Thomas, W. C.
Surface Temperature Measurement Using Electroplated Thermocouples. 75—WA/TM-2.
Thompson, P. A. and Arena, C. C.
Prediction of the Critical Massflow and Related Problems in the Flow of Real Gases. 75—FE-12.
Threader, A. L.
see **Williams, J.**
Tidbury, G. H.
see **Talbot, C. R. S.**
Titterington, W. A. and Erickson, A. C.
Design and Test Status for Life Support Applications of SPE Oxygen Generation Systems. 75—ENAs-50.
Todd, D. M. and Sanesi, N. L.
Beaver Plant - Conversion to Combined Cycle. 75—Pwr-29.
Tobbe, H.
Evaluation of Fuel Rod Cladding Strength in Steady and Non-Steady Reactor Operation. 75—WA/HT-74.
Toepel, F. P. and Moodey, J. C.
Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility. 75—WA/NE-2.
Tong, L. S.
A Phenomenological Study of Critical Heat Flux. 75—HT-68.

Tornillo, E. J.
An Analysis of the Unsteady Non-Synchronous Response of a Rotating, Whirling and Wobbling Shaft. 75—DE-52.
Torrance, K. E.
see **Ribando, R. J.**
Torti, M. L.
see **Bart, R. K.**
Townsend, M. A. and Lepofsky, R. J.
A Powered Bipedal Walking Prosthesis. 75—WA/Bio-14.
Townsend, M. A.
A Practical Stability Analysis of a Class of Bipedal Locomotion Prostheses. 75—WA/Bio-13.
Trezek, G. J.
see **Schrock, V. E.**
Trucks, H.
see **Class, C. R.**
Trusch, R. B. and Nason, J.
Compact Heat Exchangers for the Space Shuttle. 75—ENAs-54.
Tsai, C. I.
see **Bullen, A. G. R.**
Tsai, S. C.
A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits. 75—WA/Aut-22.
Tsai, Y-W.
see **Enomoto, H.**
Tsang, S. and duPlessis, M. P.
An All-Pneumatic Artificial Ventricle Driving System. 75—WA/Flcs-2.
Tse, Y. H.
see **Martin, G. C.**
Tsukuda, Y.
see **Takata, H.**
Tucker, T. R.
Hettche, L. R.
Tupper, G. P.
see **O'Neil, P. L.**
Turner, L. D.
see **Pierce, F. E.**
Turnipseed, H. S.
see **Bravenec, E. V.**
Tyler, J. R. and Comins, H. E.
Industrial Gas Turbine Materials and Some Service Experiences. 75—GT-19.
Tyson, T. J.
see **Heap, M. P.**

U

Uhl, W. K. and Fowler, E. D.
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions. 75—Pet-36.
Upp, E. L.
Large Capacity Petroleum Measurement Systems. 75—WA/FM-3.

V

Vachon, R. I.
see **Khader, M. S.**
Vajpayee, S. and Pandey, P. C.
On Work Rests Used While Turning Slender Jobs. 75—WA/Prod-21.
Vandivier, K. W.
Engineers, Ethics, and Economics. 75—TS-2.
Vanyo, J. P.
see **Ward, C. J.**
Vaught, J. M.
The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission. 75—WA/GT-11.
Veenema, R. J.
see **Ambs, L. L.**
Vegter, B. J., Roidt, M., Pechersky, M. J., Kothmann, R. E. and Markley, R. A.
Measurements of Velocities Downstream of Blocked Subchannels in a Model Reactor Rod Bundle. 75—HT-2.
Venuvinod, P. K. and Nair, E. V.
On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting. 75—WA/Prod-20.
Verbeek, P.
see **Hoppe, N.**
Vlachos, N. S.
see **Gosman, A. D.**
Vogt, J. P.
see **Fitch, A. H.**
Von Riesemann, W. A. and Gubbels, N. H.
Analysis of an In-Pile Reactor Tube. 75—DET-43.
Vrable, D. L. and Schuster, J. R.
A Secondary Power Plant for Gas Turbine - HTGR Waste Heat Utilization. 75—WA/HT-45.
Vroom, D. W.
see **Kinyon, B. W.**
Vujasinovic, A. N.
Shear Rams for Blowout Preventers. 75—Pet-8.

W

Wachel, J. C.
Nonsynchronous Instability of Centrifugal Compressors. 75—Pet-22.
Wada, B. K. and Garba, J. A.
Dynamic Analysis and Test Results of the Viking Orbiter. 75—WA/Aero-7.
Wadsworth, W. J.
Hot Gas Ducting, Expansion Joints and Dampers: A Case History. 75—GT-75.
Walburn, F. J. and Schneck, D. J.
A Constitutive Equation for Whole Human Blood. 75—WA/Bio-12.
Walker, G. J.
Observations of Separated Laminar Flow on Axial Compressor Blading. 75—GT-63.
Walker, J. L.
see **Diehl, R. C.**
Walker, J. R., Pogson, J. T. and Depew, C. A.
Microcircuit Temperature Control Concepts and Analysis. 75—ENAs-8.
Walling, R. L.
see **Klatt, K. G.**
Walsh, J. M., Sauer, R. L. and Brawner, C. C.
Development of an Automated Potable Water Bactericide Monitoring Unit. 75—ENAs-36.
Wambold, J. C. and Park, W. H.
A Human Model for Measuring Objective Ride Quality. 75—DET-6.
Wambold, J. C.
see **Reed, C.**
Ward, C. F. and Owens, W. L.
The Shuttle Orbiter Cabin Atmospheric Revitalization Systems. 75—ENAs-55.
Ward, C. J. and Vanyo, J. P.
A Mechanical Torque Converter. 75—DE-13.
Ward, T. L.
Space Tug Thermal Control. 75—ENAs-41.
Warda, H. A., Mobbs, F. R. and Cole, B. N.
Gas-Solids Flow in Supersonic Nozzles. 75—WA/HT-35.
Wardell, J. B. and Dalton, C.
A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula. 75—Pet-29.
Warren, J. H. and Whitelaw, R. L.
Design of an Insulated Coaxial Pipe Assembly for a Drilled Geothermal Well. 75—HT-56.
Waszink, R. P., Hwang, J. Y. and Efferding, L. E.
Thermal/Hydraulic Performance Test Results of Sodium-Heated Steam Generator Model Employing a Duplex Tube. 75—HT-65.
Watanabe, I.
see **Honami, S.**
Watanabe, I.
see **Masuda, S.**
Watanabe, I.
see **Mizuki, S.**
Waters, E. O.
see **Schneider, R. W.**
Watkinson, A. P., Miletti, D. L. and Kubanek, G. R.
Heat Transfer and Pressure Drop of Internally Finned Tubes in Laminar Oil Flow. 75—HT-41.
Watson, D. C.
see **Xistris, G. D.**
Watson, F. H.
see **Parkman, M. F.**
Wayne, S. F.
see **Rice, S. L.**
Weaver, F. L.
Mechanical Drive Turbines and Energy Conversion for the 80's. 75—WA/Pwr-1.
Weaver, F. L.
The Techniques of Machine Design. 75—DE-3.
Weber, N. F.
Analysis of the Effect of a Vibrating Blade on Plow Drawbar Force. 75—DE-14.
Wedel, G. L.
see **Durbetaki, P.**
Wehlage, E. F.
The Role of Heat Transfer in Solving Geothermal Energy Problems to Accelerate Its Effective Applications. 75—HT-57.
Weikert, W. F. and Moses, H. L.
Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate. 75—WA/Flcs-8.
Weisman, J., Ake, T. and Knott, R.
Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow. 75—WA/HT-3.
Weiss, M. P.
Simulation of Bridge Crane Load Cycles and Life Estimation. 75—DE-48.
Welch, A. J.
see **Polhamus, G. D.**
Welch, F. H. and Kurzeka, W. J.
Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems. 75—WA/NE-1.
Wells, G. W.
Potable Water Recovery for Spacecraft Application by Electrolytic Pretreatment/Air Evaporation. 75—ENAs-49.
Wells, M. K., Winter, D. C., Nelson, A. W. and McCarthy, T. C.
Blood Velocity Patterns in Coronary Arteries. 75—WA/Bio-3.
Wessling, F. C.
see **Edenburn, M. W.**
Whalley, P. B.
see **Brown, D. J.**
Whelan, J. M.
see **Lemay, I.**
Whipple, J. C.
see **Parkman, M. F.**
Whitacre, G. R. and McCann, R. A.
Comparison of Methods for the Prediction of Radiant Heat Flux Distribution and Temperature. 75—HT-9.
Whitby, K. T.
see **Dolan, D. F.**
White, A. A.
see **Punjabi, M. M.**
White, J. A.
Operational Experience with a U.S. Coast Guard R&D Prototype Shipboard Wastewater Treatment System. 75—ENAs-27.
White, S. W.
see **Dean, G. W.**
Whitelaw, J. H.
see **Gosman, A. D.**
Whitelaw, J. H.
see **Ribeiro, M. M.**
Whitelaw, R. L.
see **Warren, J. H.**
Wilchins, S. J.
Hrycak, P.
Wilde, D.
Simplifying Discrete Tolerance Assignment. 75—DET-106.
Willcutt, G. J. E., Hunn, B. D. and McSweeney, T. B.
Cost Optimization of Solar Heating of Buildings in Northern Regions. 75—WA/Sol-9.
Williams, B. A., McEwen, G. N., Montgomery, L. D. and Elkins, W. E.
Industrial and Biomedical Use of Aerospace Personal Cooling Garments. 75—ENAs-18.
Williams, F. W.
see **Musick, J. K.**
Williams, J. and Threader, A. L.
Design for a Variable Pitch Tap. 75—DE-49.
Williams, J. L.
see **Fleming, M. L.**
Williams, J. R.
see **Desai, P.**
Willis, F. F.
Graphic Design and Numerical Control Programming for Turbo-Rotor Manufacturing. 75—GT-56.
Wilson, D. S.
High Frequency Vibration as a Diagnostic Tool. 75—DE-42.
Wilson, M. P.
see **Dowdell, R. B.**
Wilson, N. P.
see **Mason, D.**
Winkleblack, R. K.
Rowan, W. J.
Winkler, J. E., Rickett, D. A. and Gould, W. P.
Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit. 75—WA/Pwr-12.

Winslow, A. M.
see **Ferriter, N.**
Winter, D. C.
see **Wells, M. K.**
Wisler, D. C.
see **Prince, D. C.**
Withers, J. G.
see **Moretti, P. M.**
Withey, D. J.
see **Baker, J. M.**
Wojcikowski, K. A.
see **Odgers, J.**
Wong, B. K.
see **Gilpin, R. R.**
Wood, J. E.
see **Perkins, D. E.**
Woodhull, A. S.
Evaporator Design for Sea Solar Power Cycles. 75—WA/Sol-5.
Wright, D.
see **Dooher, J.**
Wright, D.
see **Speckhart, F. H.**
Wright, J.
A Practical Solution to Transient Torsional Vibration in Synchronous Motor Drive Systems. 75—DE-15.
Wright, J. P.
see **Ruttner, L. E.**
Wu, C.
Measurement of Thermal Conductivity of An Ionized Suspension System. 75—HT-11.
Wu, J. N. C. and Hechmer, J. L.
Thermal Mechanical Analysis Procedure for a Semicircular Plate with Clamped Straight Edge. 75—PVP-55.
Wulff, G. L.
see **Durbetaki, P.**
Wulff, P. H.
see **Lerch, C. P.**
Wyatt, S. V. and Hagedorn, G. D.
Shipboard Multifunctional Waste Incinerator. 75—ENAs-32.
Wyckoff, H. L.
see **Stauffer, T. R.**
Wynveen, R. A.
see **Schubert, F. H.**

X

Xistris, G. D. and Watson, D. C.
Improved Anti-Friction Bearing Life Using Rotor Rundown Time as a Quality Control Indicator. 75—DE-6.

Y

Yalamanchili, R.
Accuracy, Stability, and Oscillation Characteristics of Transient Two-Dimensional Heat Condition. 75—WA/HT-85.
Yamamoto, S.
see **Kano, T.**
Yang, J. W.
see **Hellman, J. M.**
Yang, S. S.
see **Graff, W. J.**
Yang, T. H.
see **Mims, W. E.**
Yanik, S. J.
see **Amero, R. C.**
Yeh, L. T.
see **Chung, B. T. F.**
Yen, Y. C., Perham, R. E. and Quinn, W. F.
An Analytical Study of a Coiled-Pipe Heat Sink. 75—WA/HT-72.
Yip, F. C.
see **Coulter, D. M.**
Yonetsu, S.
see **Aoyama, T.**
Yost, K. J.
see **Jacko, R. B.**
Youens, J. W.
Total Gas Containment System. 75—Pet-32.
Yovanovich, M. M., Schneider, G. E. and Strong, A. B.
Transverse Apparent Thermal Conductivity of Long Rectangular Fibers in a Matrix. 75—HT-26.
Yovanovich, M. M.
see **Schneider, G. E.**
Yu, W-S.
see **Powell, J. R.**

Z

Zhavi, E.
At the Ben-Gurion University of the Negev. 75—DE-46.
Zandi, I.
Freight Pipeline. 75—ICT-20.
Zanetel, G.
see **Martin, H. R.**
Zara, J. A.
see **Gubser, J. L.**
Zinn, C. D., Lesso, W. G. and Givens, G. R.
OILSIM - A Simulation Model for Evaluation of Alternative Bidding Procedures. 75—WA/Pet-5.
Zoldak, R.
see **Heap, M. P.**

Index to
MECHANICAL ENGINEERING

Volume 98, January–December 1976

A

Abd-Alla, A.-E. M. *(author)* Principles of Digital Computer Design (CB) **Ag 104**

Abdelnour, T. A. An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**

Ablation Test Devices
A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**

Abrams, M. The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**

Abrasive Impact Wear
Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Abrupt Enlargements
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**

Absorbing Medium
Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**

Absorptance
The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**

Absorption
The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**

Aburomia, M. M. Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**

A-C Electrification
S.A.R. Orders A-C Locomotive (IF) **My 60**

Accelerating Mechanisms
Power in an Accelerating Mechanism (76-DET-60) (A) **D 92**

Acceleration Fields
A Mechanical Device for Detecting and Functioning in a Planetary-Type Acceleration Field (76-DET-72) (A) **D 93**

Acceptance Criteria
Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**

Acidity
Ruin from the Skies (BTR) **Je 62**

Ackerman, A. J. Nuclear Notes (C) **My 42**; Technical Papers and Ethics (C) **Mr 45**

Acosta, A. J. The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**

Acosta, J. Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**

Acoustic Emission Signals
On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) (A) **Ap 98**

Acoustic Fluids
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**

Acoustic Lagging
The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) (A) **My 95**

Acoustic Liners
Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**
On the "In-Situ" Control of Acoustic Liner Attenuation (76-GT-61) (A) **Jl 94**

Accustic Transmissions
Acoustic Transmission of Pipe Wrapping Systems (75-WA/Pwr-7) (A) **F 85**

Acoustic Treatment
Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**

Acoustical Energy Decay
Acoustical Energy Decay in Piping Systems (75-WA/Pet-6) (A) **My 95**

Acrylic Plastics
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) (A) **Ap 91**
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) (A) **Ap 91**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**

Active Components
Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**

Adamczak, R. L. Elections to Fellow Grade **Ja 108**

Adams, G. G. Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **Jl 99**

Adams, J. C., Jr. Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**

Adams, J. R. Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**

Adams, T. N. The Effects of Test Procedures on the Interpretation of NO_x Emission Data from a Gas Turbine (75-WA/APC-9) (A) **Je 113**

Adaptive Control
Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**

Adaptive Servosystems
On the Design of Adaptive Servosystems (75-WA/Aut-14) (A) **Ap 94**

Additives
The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**

Addendum Correction
Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**

Adenubi, S. O. Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) (A) **Je 108**

Adhesive Lap Joint
Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**

Adhesives
New Directions for Adhesive Usage (76-DE-15) (A) **S 90**
What's New in Glue (NB) **D 72**

Adiabatic Flow
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**

Adobe Ranch
A Solar Heating System for a Northern New Mexico Adobe House (75-WA/Sol-11) (A) **Mr 94**

Adsorber Beds
A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**

Advanced Acoustic Nacelle Concepts
Advanced Acoustic Nacelle Concepts (76-GT-35) (A) **Jl 90**

Advanced Composites
Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 94**
Advanced Composite Fan Blade Flight Evaluation Program (76-GT-75) (A) **Jl 95**

Advanced Control Center
Advanced Control Center for Nuclear Plants (BTR) **Ag 50**

Advanced Gas Turbines
Development and Design of Directionally Solidified Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **Jl 90**
The Potential of Oxide Dispersion Strengthened Superalloys for Advanced Gas Turbines (76-GT-118) (A) **Ag 91**

Advanced Marine Vessels
Study of Light Weight Turbine Transmission Systems (76-GT-121) (A) **Ag 92**

Advani, S. B. On the Design of Suboptimal Regulators for Linear Distributed Systems (75-WA/Aut-9) (A) **Ap 94**

Aepli, T. C. Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**

Aero Derivative Gas Turbines
Logistic Support of Aero Derivative Marine Gas Turbines in the Royal Navy (76-GT-44) (A) **Jl 92**

Aerodynamics
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**
Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **Jl 98**
An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **Jl 88**
An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **Jl 88**
Road Vehicle Aerodynamics (CB) **F 89**

Aerosol Interactions
Laser Beam-Atmospheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**

Aerospace Engineering
Advanced Composites: Design Technology Transfer from

CODE

Months are denoted by **boldface** letters:

January	**Ja**	July	**Jl**
February	**F**	August	**Ag**
March	**Mr**	September	**S**
April	**Ap**	October	**O**
May	**My**	November	**N**
June	**Je**	December	**D**

(A)	Abstract
(AC)	Author's Closure
(BR)	Book Review
(BTR)	Briefing the Record
(CT)	Computers and Technology
(C)	Correspondence
(CB)	Current Books
(D)	Discussion
(Ed)	Editorial
(EN)	Educational News
(ES)	Energyscope
(IF)	International Focus
(NB)	News Brief
(NR)	ME News Roundup
(PS)	Personally Speaking
(TL)	Technical Literature
(WW)	Washington Window

Aerospace to Machinery (76-DET-80) (A) **D 94**
Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**
Dynamic Analysis and Test Results of the Viking Orbiter (75-WA/Aero-7) (A) **My 98**
Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques (75-WA/Aero-9) (A) **My 99**
Federal Technology Transfer: Results of a Survey of Formal Programs (75-WA/Aero-4) (A) **My 98**
Public Sector Technology Transfer—A Congressional Perspective (75-WA/Aero-1) (A) **My 98**; The Policy Connection (75-WA/Aero-3) (A) **My 98**
Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**
Risk Management Technique for Design and Operation of Facilities and Equipment (75-WA/Aero-5) (A) **My 98**
UTS: Accelerating Public Sector Technology Utilization (75-WA/Aero-2) (A) **My 98**

Aerospaces Sciences
Progress in Aerospace Sciences (CB) **Ap 107**

Afify, E. M. Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**

Aggressive Atmospheres
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**

Agrawal, D. D. Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**

Agrawal, S. K. Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**

Agricultural Priorities
New Agricultural Priorities

Agricultural Wastes
Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Agriculture
Crops and Air Pollution (BTR) **Ja 43**

Ahlbeck, D. R. An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**

Ahlen, J. W. A Pleasant Surprise (C) **Ja 36**

Ahlert, R. C. Simulation and Field Observation of Heated Discharge Dispersion Patterns (75-WA/HT-61) (A) **My 103**

Ahmed, H. U. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**

AIPE
see **American Institute of Plant Engineers**

Air
An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**
Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**
The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**
Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) (A) **My 96**

Air Breathing
The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**

Air Classification
The Technology of Solid Waste Air Classification for Resource Recovery (76-ENAs-50) (A) **N 92**

Air Compressors
Oil-Free Screw Compressor (BTR) **Ag 52**

Air Contamination
Aircraft Environmental Control Problems as a Result of Air Contamination (76-ENAs-13) (A) **O 94**

Air Coolers
Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**

Air Cushion Suspensions
Plenum Air Cushion/Compressor-Duct Dyanmic Interactions (75-WA/Aut-23) (A) **Ap 93**

Air Cushion Vehicles
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**

Air Filtration
Air Inlet Filtration for Gas Turbine Units (76-GT-81) (A) **Jl 95**
Gas Turbine Air Filtration—A Means of Sulfidation Control (76-GT-59) (A) **Jl 93**

Air Inlet Valves
Transient Analysis of Air Vessels and Air Inlet Valves (76-FE-28) (A) **S 95**

Air Jets
The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**

Air Leakage
Advanced Labyrinth Seal Design Performance for High Pressure Ratio Gas Turbines (75-WA/GT-22) (A) **F 83**

Air Pollution Control
Air Pollution: The Emissions, the Regulations and the Controls (CB) **F 89**
Air Quality Considerations in Environmental Planning (75-WA/APC-12) (A) **Je 114**
An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**
Crops and Air Pollution (BTR) **Ja 43**
The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**
The Effects of Test Procedures on the Interpretation of NO_x Emission Data from a Gas Turbine (75-WA/APC-9) (A) **Je 113**
Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**
Fluidic Velocity Sensor for Gaseous Effluents (75-WA/APC-6) (A) **Je 113**
The Long Arm of Air Pollution (ES) **O 18**
Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**
Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**
A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**
A Psychrometric Method for Determining Water Vapor in Flue Gas (75-WA/APC-8) (A) **Je 113**
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**
Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**

Air Quality
Spreading Urban "Effluence" (BTR) **Mr 49**

Air Quality Assessments
An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**

Air Storage Systems
Preliminary Thermal Analysis of Air-Storage Gas Turbine System (75-Pwr-20) (A) **Ja 112**

Air-Storage Power Plants
Cycle Analysis of Air-Storage Power Plants (76-GT-41) (A) **Jl 91**

Air Systems Design
Gas Turbine Engine Internal Air Systems: A Review of the Requirements and the Problems (75-WA/GT-1) (A) **F 80**

Air Tables
Steam and Air Tables in SI Units: Including Data for Other Substances and a Separate Mollier Chart for Steam (CB) **My 108**

Air Vessels
Transient Analysis of Air Vessels and Air Inlet Valves (76-FE-28) (A) **S 95**

Air-Cooled Turbine Blades
Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**

Airbag Suspension
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**

Aircraft
Craft Readied for Tests (BTR) **F 44**
Evaluation of Improved Cycles for Marine Application of An Aircraft Derivative Gas Turbine (76-GT-114) (A) **Ag 91**
Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-21) (A) **O 95**
New Cabin Pressure Control System for DC-9 Aircraft (76-ENAs-3) (A) **O 92**

Aircraft Environmental Control
Aircraft Environmental Control Problems as a Result of Air Contamination (76-ENAs-13) (A) **O 94**

Aircraft Gas Turbines
Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **Jl 87**
Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**
Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**

Aircraft Instruments
Cooling Methods for Aircraft Electronics Equipment (76-ENAs-51) (A) **N 92**

Aircraft Materials
Coating Technology for the Marine Gas Turbine Airfoil Application (76-GT-111) (A) **Ag 91**
Need for Advanced Aircraft Materials (NB) **Jl 62**

Aircraft Powerplants
Noise Technology Requirements for Future Aircraft Powerplants (76-GT-69) (A) **Jl 95**

Airfoil Cascades
The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **Jl 88**

Airfoils
Development and Design of Directionally Solidified Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **Jl 90**
A Study on Multi-Element Cascades and Airfoils (75-WA/FE-3) (A) **Je 108**

Airlock Support Subsystem
The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**

Airplanes
Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**

Airways
Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**

Air-to-Air Intercooling
Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**

Ake, T. Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**

Aitken, H. G. J. *(author)* Syntony and Spark: The Origins of Radio (CB) **O 106**

Alaska Engineering
Alaskan Connection Appreciated (C) **Ja 37**

Alaska Pipeline
The Pipeline's Leaking! (ES) **Ja 10**
Which Way for Alaska's Natural Gas? (ES) **Je 18**

Alaskan Connection
Dissecting the Alaskan Connection (C) **Mr 43**

Alcone, J. M. Low Cost Augmented Heat Pump System for Residential Heating and Cooling (75-WA/Sol-7) (A) **Mr 92**

Algebraic Loci
Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Algebraic Loci and Couplings (76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**

Allen, C. W. Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**; A Simplified Model for the Elastohydrodynamic Traction Between Rollers (75-Lub-6) (A) **Ja 118**

Allen, E. M. Elections to Fellow Grade **Ja 108**

Allen, H. S. Elections to Fellow Grade **My 91**

Allen, R. R. Mechanisms as Components of Dynamic Systems: A Bond Graph Approach (76-DET-21) (A) **N 98**

Allison, P. R. PACE 260 at Comanche, the First Two Years (76-GT-109) (A) **Ag 91**

Alloys
Interfacial Phenomena in Metals and Alloys (CB) **F 89**
The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**

All-Pneumatic Driving Systems
An All-Pneumatic Artificial Ventricle Driving System

(75-WA/Flcs-2) (A) **Je 114**

Al-Qureshi, H. A. Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE-9) (A) **Ag 100**

Altan, T. Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**

Alternate Fuels Capability

Alternate Fuels Capability of Gas Turbines in the Process Industry (76-GT-119) (A) **Ag 92**

Alumina

Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Aluminum

Long-Lived Welding Tips (BTR) **Je 57**

Magnesium vs. Aluminum (NB) **D 72**

Aluminum Alloys

Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) (A) **Mr 101**

Aluminum Beams

Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**

Aluminum-Oxide Grinding Wheels

An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**

Aluri, R. *(author)* U. S. Government Scientific and Technical Periodicals (CB) **Ag 104**

Amana, O. Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **Jl 90**

Amana, O. M. Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **Jl 98**

Ambient Conditions

Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**

Ambient Temperatures

Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **Jl 97**

Ambs, L. L. Power Turbines for Ocean Thermal Energy Conversions Systems (75-WA/OcE-11) (A) **Ap 92**

American Btu Meters

Energy Conservation via Btu Meters (BTR) **Ap 60**

American Indian Engineers

National Society of American Indian Engineers Formed (EN) **Ag 64**

American Institute of Plant Engineers

AIPE Swamped with Applications for Certification **Je 78**

American Society of Mechanical Engineers

American National Metric Council's Second Annual Conference and Exposition, preview (NR) **Mr 66**

American Power Conference, review (NR) **Je 68**

38th Annual American Power Conference Meeting, preview (NR) **Mr 67**

22nd Annual Citrus Engineering Conference, preview **F 68**

48th Annual Diesel & Gas Engine Power Conference & Exhibit, preview **F 68**; review **Je 92**

21st Annual International Gas Turbine Conference/18th Annual Fluids Engineering Conference, preview **F 66**

11th Annual Intersociety Energy Conversion Engineering Conferences, review (NR) **N 58**

ASME/ANMC Metric Design Seminar, preview (NR) **S 67**; **D 70**

1976 ASME Applied Mechanics Conference, preview **Ap 84**; **My 86**

ASME Committee on Nuclear Quality Assurance **Je 124**

ASME Congressional Fellow Program (Ed) **Ap 21**

ASME Congressional Fellows Find a Home (NR) **Mr 81**

ASME Forms Professional Development Committee **Mr 82**

ASME Government Intern Program—Final Report (EN) **O 71**

1976 ASME-IEEE Joint Power Generation Conference, review (NR) **D 66**

ASME Launches Call for Participation in Technical Divisions **Mr 85**

ASME Needs A Few Good Officers **F 68**

ASME Opens Office in Chicago **N 83**

ASME Pressure Vessel and Piping Short Course Program **Je 83**

1976 ASME Regional Student Conference Reports **O 74**

ASME Sections—Educational Resource Centers **O 77**

ASME—Smithsonian Archival Program: Expanding the Annals of Engineering (NR) **My 66**

On ASME Stands (C) **S 48**

ASME Student Members on Solar Tour at Sandia Labs (EN) **Je 81**

ASME Wants You to Nominate New Officers **D 85**

ASME's Economic Future Is In Your Hands (Ed) **F 13**

ASME's Nominating Committee Wants You! **My 88**

ASME's Public Relations Achievements Honored, review (NR) **Mr 65**

ASME's Region VIII Says "No" to Anti-Nuclear Propositions **N 83**

Budget Deficits, Surpluses, and the Five-Year Plan (Ed) **N 13**

Case Studies Contest Goes National **N 83**

1980 Census: What Are Your Suggestions? (NR) **My 64**

Charter Presentation (EN) **Ag 65**

Codes and Standards **Ja 128**; **F 91**; **Mr 109**; **Ap 109**; **My 110**

Congressional Fellows Give Their Views: Two Sides of the U.S. Congress (NR) **My 62**

Controlling Member Dues (Ed) **Ag 17**

1976 Design Engineering Conference and Show, preview **F 67**; review **Je 88**

1976 Design Engineering Technical Conferences, preview **Ag 77**; review **D 82**

Energy Technology Conference and Exhibition, preview **Je 101**

Engineering Foundation Conference, review (NR) **Ja 57**

Engineering in Medicine and Biology Conference, preview (NR) **O 68**

1976 Engineers Joint Council General Assembly, review **Mr 63**

Fifth Annual International Pollution Engineering and Maintenance Congress and Exposition, preview (NR) **S 68**

First Annual Beer and Soda Can Grand Prix, review (EN) **Ag 65**

First Annual Exposition on Transportation Technology/Fourth Intersociety Conference on Transportation, preview (NR) **F 55**

Fourth Intersociety Conference on Transportation, review (NR) **S 64**

1976 Gas Turbine Products Show, review **My 78**

Government Responds to ASME Energy Statement (Ed) **S 17**

Honors and Awards **Ja 80**

IEC/TC5 Meeting Held in Nice (NR) **Jl 60**

Index to Place of Publication of ASME Papers—1975 Supplement (CB) **N 104**

21st International Gas Turbine and 18th Fluids Engineering Conferences, review **My 77**

International Joint Petroleum Mechanical Engineering and Pressure Vessels and Piping Conference, preview **Ag 76**; review **N 74**

1976 International Seminar on Heat and Mass Transfer in Buildings, preview (NR) **Ag 60**

1976 Intersociety Conference on Transportation, preview (NR) **Je 76**

Joint ASME/ANS International Conference on Advanced Nuclear Energy Systems, preview (NR) **F 56**; review **My 82**

Joint Automatic Control Conference, preview (NR) **Je 76**

1976 Joint Engineering Legislative Forum, preview (NR) **Mr 66**

Joint Engineering Management Conference, preview (NR) **S 67**

1975 Joint Lubrication Conference, review (NR) **Ja 58**

Joint Power Generation Conference, preview (NR) **Ag 59**

19th Joint Railroad Conference, preview (NR) **Mr 66**

Landmarks Program **Je 98**; **Ag 78**; **S 82**; review **Ja 102**

Long-Distance Power in California **N 80**

Looking Out for Your Interests (PS) **D 79**

Lubrication of Concentrated Contacts Symposium, preview **Ap 86**

1976 Lubrication Symposium, review **Ag 75**

A Matter of Fellowship (PS) **Ap 77**

ME Cover Honored by the Society of Publication Designers **Ag 81**

Member Dues is Topic of Proposed ASME Amendment **Ap 85**

Member Interests (C) **Ja 37**

16th National Heat Transfer Conference, preview **Jl 78**; review (NR) **O 66**

1976 National Material Handling Show, Seminar, and Symposium, review (NR) **Je 70**

Negev Development—An Integrated Design Project for Mechanical Engineering Students (76-DE-7) (A) **Ag 100**

The New Journal of Bioengineering **Jl 80**

1976 Offshore Technology Conference, preview (NR) **Ap 66**; review (NR) **Jl 56**

Outstanding Leaders Feted at Spring Roundup—Met Section Honors Notable Achievements **Jl 81**

Pi Tau Sigma Award Nominations Wanted (NR) **N 85**

Pi Tau Sigma Nominations Urged **Mr 88**

Professional Development Digest **S 73**

Proposed Constitutional Amendment: Towards a Fiscally Sound Society **Mr 80**

PVT Journal Broadens Its Scope **Jl 82**

Region IX Opposes Nuclear Initiative **My 85**

The Road Ahead **My 37**

Search Opens for 1977 Congressional Fellows **Ap 82**

Second EJC—National Commission Conference, review (NR) **Ja 56**

Second International Conference on the Mechanical Behavior of Materials, preview (NR) **Jl 60**

Section News **F 70**

Section Notes. . . (EN) **O 73**

Section and Region News **Mr 84**; **Ap 86**; **My 87**; **Ag 82**; **O 88**

National Engineers Week **Je 99**

Selling ASME: A Job for You (PS) **N 71**

Seventh Annual National Waste Processing Conference and Exhibit, preview **Ap 80**

Seventh Biennial National Waste Processing Conference, review **Jl 71**

Seventh Solid Waste Processing Conference and Exhibit, preview (NR) **Mr 66**

Sixth Intersociety Conference on Environmental Systems, preview (NR) **Je 78**

1976 Summer Annual Meeting, review **Ag 72**

Technical Division Short Course Programs **Ag 67**

Technology Executives Conference, review **My 38**

What Does An ASME President Do? (Ed) **Je 17**

Who Wants What? ASME Member Survey Finds Out **S 38**

Winners of ASME's Design Problem Contest **S 84**

1976 Winter Annual Meeting, preview **N 78**

96th Winter Annual Meeting, review **Ja 70**

97th Winter Annual Meeting, preview **S 78**; **O 82**

With the Student Sections. . . (EN) **O 72**

Woman's Auxiliary **F 70**; **Mr 88**; **My 87**; **Ag 85**

52nd Annual Luncheon at WAM **Ja 100**

ME Students Can Qualify for Loans **Je 100**

The Spouses Speak Up (Ed) **O 17**

Winter Annual Meeting—Sightseeing and Shopping; Auxiliary Awards Two Rice Scholarships **O 85**; Dining Out in New York **N 82**

American Society for Testing and Materials

Symposium on Viscosity-Related Engine Performance, preview (NR) **My 64**

American Technology

200 Years of Mechanical Engineering **Ja 29**

America's Wooden Age

America's Wooden Age: Aspects of Its Early Technology (CB) **F 89**

Amero, R. C. Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**

Ammonia-Water Mixtures

Entropy and Availability Function Values of Saturated Ammonia-Water Mixtures (75-WA/PID-2) (A) **My 96**

Amode, J. O. Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**

Amplifier Scalers

A Flueric Laminar Operational Amplifier Scaler (75-WA/Flcs-3) (A) **Je 114**

Anaerobic Products

"Anaerobic" Sealant (BTR) **Je 59**

Analog Computer Methods

An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions (75-WA/DE-11) (A) **F 87**

Analog Detection System

Laser Beams Prevent Fraud (IF) **N 56**

Andeen, B. R. Heat Transfer to Horizontal Tubes in Shallow Fluidized Beds (76-HT-67) (A) **N 89**

Anderes, J. R. The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**

Andersen, B. W. Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**

Anderson, C. A. An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) (A) **S 100**

Anderson, J. H. Don't Forget Sea Solar Power (C) **O 51**

Anderson, W. J. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter,

and Overall Analysis (75-Lub-45) (A) **Ja 124**

Ando, Y. A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Andonedis, A. Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View (75-WA/NE-4) (A) **F 78**

Andresen, J. A. Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**

Aneiros, D. Z. Still More on Nader (C) **Je 48**

Angelino, A. J. Nuclear Reactions (C) **Ap 47**

Anglaret, G. One More Metric Voice (C) **O 50**

Angular-Motion Compensators

Analytical Design of Cam-Type Angular-Motion Compensators (76-DET-22) (A) **N 99**

Animals

Assess Electric Field Effects on Animals (BTR) **D 53**

Animation

Mechanism Design Using Animation (76-DET-54) (A) **N 102**

Anisotropic Laminated Plates

Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**

Annand, R. R. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**

Annealing Furnace

Continuous Annealing Furnace (IF) **Ap 65**

Annubars

Investigation of the Properties of the Annubar, A Flow Measurement Probe (75-WA/FM-2) (A) **Je 118**

Annular Blade Cascades

Design of an Annular Channel for Testing Highly Loaded Compressor Blades; Comparison Between Theory and Experiments (76-GT-79) (A) **JI 96**

Annular Diffusers

An Experimental Investigation of the Swirling-Flow Performance of an Annular Diffuser at Low Speed (75-WA/FE-17) (A) **Je 110**

Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) (A) **Je 108**

Annular Flow

Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**

Annular Rollers

An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**

Annular Rotating Flow

Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**

Annuli

Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**

Annulus Wall

Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **JI 93**

Antidive Suspension Characteristics

The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**

Anti-Nuclear Propositions

ASME's Region VIII says "No" to Anti-Nuclear Propositions **N 83**

Antiplane Impulse

On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) (A) **S 101**

Antiquity

Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**

Antoine, V. SI Comments (C) **F 39**

Anuskiewicz, T. Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**

Apblett, W. R. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Applanation Tonometer

Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**

Applied Mechanics

Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**

On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**

Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**

Axisymmetric Potential Flow Over Two Spheres in Contact (75-WA/APM-26) (A) **JI 99**

Axisymmetric Stokes Flow Past Cones Including the Case of the Needle (75-WA/APM-2) (A) **Je 119**

Behavior of Dynamic Systems Governed by a Simple Nonlinear Difference Equation (75-WA/APM-21) (A) **Je 121**

Boundary-Layer Similarity Near the Edge of a Rotating Disk (75-WA/APM-3) (A) **Je 119**

Creep Buckling of Imperfect Columns (76-APM-10) (A) **S 99**

On the Creep Rupture of a Tube and a Sphere (75-WA/APM-4) (A) **Je 119**

Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) (A) **O 104**

Dynamic Behavior of Ideal Fiber-Reinforced Rigid-Plastic Beams (76-APM-21) (A) **S 100**

Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**

Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**

Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) (A) **S 99**

The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**

Dynamics of Initially Stressed Plates (76-APM-29) (A) **S 101**

The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**

An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**

On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**

Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**

An Energy Method Determination of Large Cable Dynamics (76-APM-20) (A) **S 100**

Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**

The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**

Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**

On the Extension of Elastic Two-Ply Filament Yarns (75-WA/APM-15) (A) **Je 120**

On an Extremum Principle for Mode Form Solutions in Plastic Structural Dynamics (75-WA/APM-6) (A) **Je 119**

Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) (A) **S 99**

Harmonic Waves in Layered Composites: Comparison Among Several Schemes (75-WA/APM-19) (A) **Je 120**

High Frequency Response of Beams (75-WA/APM-18) (A) **Je 120**

Hydrodynamic Pressure Field on a Slender Ship Moving Over a High Frequency Wavy Shallow Bottom (76-APM-22) (A) **S 100**

Identification of Viscous Damping in Structures from Modal Information (76-APM-36) (A) **O 105**

Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) (A) **S 98**

On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) (A) **S 101**

An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) (A) **S 100**

Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) (A) **S 101**

Magnetoelastic Buckling and Vibration of a Rod Carrying Electric Current (75-WA/APM-28) (A) **JI 99**

Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) (A) **S 99**

A Mechanical Model for Mammalian Tendon (75-WA/APM-20) (A) **Je 121**

Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**

Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) (A) **O 105**

Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**

A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) (A) **S 100**

Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **JI 99**

Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**

Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**

A Practical Two Surface Plasticity Theory (75-WA/APM-12) (A) **Je 120**

Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) (A) **S 99**

Radial Expansion of Impacted Helical Springs (75-WA/APM-25) (A) **JI 98**

Reflection and Transmission of Elastic-Plastic Spherical Waves at a Spherical Interface (75-WA/APM-23) (A) **Je 121**

Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**

Scattering of a Love Wave by the Edge of a Thin Surface Layer (75-WA/APM-24) (A) **JI 98**

Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**

Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **JI 99**

Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**

Stresses in Ventricular Wall (76-APM-31) (A) **O 104**

A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) (A) **S 99**

A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) (A) **S 100**

Thermoelasticity of Cylindrically Anisotrropic Generally Laminated Cylinders (76-APM-3) (A) **S 98**

The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) (A) **S 98**

Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**

Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**

On the Unconditional Stability of an Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**

Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**

Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**

On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**

Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) (A) **S 99**

Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **JI 98**

Applied Science

Statistical Models in Applied Science (CB) **My 108**

Aqueous Effluent Sampling

Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**

Arches

Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Architects

Simplified Guide to Construction Management for Architects and Engineers (CB) **S 103**

Arctic Pile Supports

Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**

Arctic Service
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Ardayfio, D. Characteristics of the Dynamic Vibration Absorber with Elastically Supported Damper (76-DE-43) (A) **S 93**; Dynamics of High-Speed Cam Mechanisms with Damped Flexible Followers Driven by Flexible Camshafts (76-DET-63) (A) **D 92**; Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**
Ariga, I. Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **JI 96**
Armored Vehicles
Armour Propre (BTR) **JI 43**
Arnold, F. R. Momentous Momentum (C) **N 42**
Arnold, J. N. Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**
Arnold, J. R. Product Planning and Development—An Evolutionary Process—One Company's Experience (75-WA/Mgt-8) (A) **Ap 96**
Aronson, D. Another View of Overview (C) **My 39**; Heat Transfer in a Corona Discharge (C) **D 47**
Artery Elasticity
A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**
Artificial Knee
Artificial Knee with Triaxial Motion (BTR) **My 56**
Artificial Muscle System
Artificial Muscle System (BTR) **S 58**
Artificial Ventricles
An All-Pneumatic Artificial Ventricle Driving System (75-WA/Flcs-2) (A) **Je 114**
Asano, K. High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**
Asbury, J. G. Price and Availability of Western Coal in the Midwestern Market (76-IPC-Pwr-7) (A) **S 94**
Aschauer, G. The Redundant Omega Clutch—A Marine Propulsion Clutch for Turbines (76-GT-65) (A) **JI 94**
Ash Chemistry
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**
Askew, A. A. Economic Treatment and Operation of Boilers (76-IPC-Pwr-3) (A) **S 93**
Askland, C. L., Jr. Fluid Mechanics for the Valve Designer (76-PVP-71) (A) **D 105**
Aspect Ratios
Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Asphalt
Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**
Assembly Imbalance
Minimizing Assembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **JI 93**
Assurance Sciences
Assuring Product Integrity (CB) **Ap 108**
Assurance Technologies
Assurance Technologies at R&M Symposium (NR) **D 70**
Astill, K. N. A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**
Astronauts
Astronauts Needed (BTR) **S 55**
Asymmetric Shafts
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**
Asymmetrical Couplers
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**
Atcher, B. L. *(author)* Technological Innovation—A Methodology (CB) **JI 101**
Athabasca Tar Sands
Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**
Atkey, R. C. The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **JI 98**
Atkinson, W. H. Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**
Atmospheric Acidity
Ruin from the Skies (BTR) **Je 62**
Atmospheric Aerosol Interactions
Laser Beam-Atmopsheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**
Atmospheric Particulates
A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**
Atmospheric Pressure
NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**
Atmospheric Storage
Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
Attritious Wear
Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**
Audible Warning Devices
A Siren's Sound is Not Enough (BTR) **Ag 52**
Auger, C. P. *(editor)* Use of Reports Literature (CB) **F 88**
Ausforged Gears
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**
Ausherman, V. K. Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**
Austenitic Stainless Steels
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**
Elevated Temperature Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**
Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**
Authorization Certificate
Numero Uno (BTR) **Ap 58**
Autoignition
Autoignition Characteristics of Hydrocarbon Fuels at Elevated Temperatures and Pressures (76-GT-3) (A) **JI 87**
Automated Production Cutting
Use of the Water Jet in Automated Production Cutting (75-WA/Aut-21) (A) **Ap 95**
Automated Water Jet Cleaning **D 40**
Automatic Balancing System
An Automatic Balancer Design for a Vertical-Axis Clothes Washing Machine (76-DE-24) (A) **S 91**
Automatic Control
Analytical Models for Certain Guideway Irregularities (75-WA/Aut-11) (A) **Ap 94**
An Automatic Control System for Sonic Inlets (75-WA/Aut-1) (A) **Ap 93**
Bond Graphs of Microeconomic Systems (75-WA/Aut-8) (A) **Ap 93**
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**
On the Design of Adaptive Servosystems (75-WA/Aut-14) (A) **Ap 94**
On the Design of Suboptimal Regulators for Linear Distributed Systems (75-WA/Aut-9) (A) **Ap 94**
Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**
The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**
The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**
Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**
The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**
A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) (A) **Ap 95**
Maximizing Distance of the Golf Drive: An Optimal Control Study (75-WA/Aut-12) (A) **Ap 94**
Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**
Plenum Air Cushion Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Position Control of Pipelay Barges (75-WA/Aut-18) (A) **Ap 95**
The Selection and Optimization of a Continuously Variable Transmission for Automotive Use (75-WA/Aut-16) (A) **Ap 94**
Simplification of High-Order Mechanical Systems Using the Routh Approximation (75-WA/Aut-10) (A) **Ap 94**
A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits (75-WA/Aut-22) (A) **Ap 95**
Social Implications of Technology: An Economic Model Based on Efficiency (75-WA/Aut-2) (A) **Ap 93**
Stability of Cyclic Dynamical Systems (75-WA/Aut-13) (A) **Ap 94**
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) (A) **Ap 93**
Toward a Mathematical Theory of Environmental Monitoring (75-WA/Aut-7) (A) **Ap 93**
Use of the Water Jet in Automated Production Cutting (75-WA/Aut-21) (A) **Ap 95**
Automatic Control Circuits
Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**
Automatic Control Systems
Electronic Engine Control: A Draper Breakthrough Ripens in 25 Years **S 35**
Automatic Hydraulic Ram
The Automatic Hydraulic Ram: Its Theory and Design (76-DE-17) (A) **S 90**
Automatic Orientation Control
Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**
Automation
Automation in Mining Industry (BTR) **Je 54**
Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**
Automobile Care
Advice from the Past (ES) **My 16**
Automotive Engines
Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**
Automobile Fuel Consumption
How to Save Gasoline: Public Policy Alternatives for the Automobile (CB) **O 106**
Automotive Gas Turbines
An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**
Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**
Improved Auto Gas Turbine Engine (BTR) **D 61**
Automotive Vehicles
Efficiency of Discrete Gear Transmissions as a Means of Starting and Accelerating Automotive Vehicles (76-DE-40) (A) **S 92**
Automotive-Turbine Engines
A Simple Variable-Geometry Combustor for the Automotive-Turbine Engine (76-GT-11) (A) **JI 87**
Auxiliary Payload Power System
Auxiliary Payload Power System Thermal Control (76-ENAs-59) (A) **N 93**
Aviation
The Grumman Story (CB) **S 103**
Avitzur, B. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**; Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**
Award Programs
Lincoln Arc Award Program (EN) **Mr 72**
Awards
Deadline for Eckman Award (EN) **F 60**
Fulbright-Hays Awards (EN) **F 58**
Awards Contests
Awards Contest for Papers on Pumps (EN) **Je 80**
Axial Compressors
Detailed Flow Measurements in a Four Stage Axial Compressor (76-GT-46) (A) **JI 92**
Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor Stage (76-GT-18) (A) **JI 88**
Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model (75-WA/GT-10) (A) **F 82**
Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions

(75-WA/FE-5) (A) **Je 108**

The Use of Experimental Interstate Data for Matching the Performance of Axial Compressor Stages Having Variable-Setting-Angle Blade Rows (76-GT-42) (A) **JI 91**

Axial Flow

Experimental Evaluation of Axial-Flow Transonic Compressor (76-GT-34) (A) **JI 90**

A Study of the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines (75-WA/FE-18) (A) **Je 110**

Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**

Axial Flow Compressors

Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**

Flow Prediction in Axial Flow Compressors Including End-Wall Boundary Layers (76-GT-72) (A) **JI 95**

Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/HT-6) (A) **F 81**

Axial Stresses

Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) (A) **Mr 106**

Axial Velocity

Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**

Axisymmetric Air Jets

A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**

Axisymmetric Cones

Axisymmetric Stokes Flow Past Cones Including the Case of the Needle (75-WA/APM-2) (A) **Je 119**

Axisymmetric Flow

Axisymmetric Potential Flow Over Two Spheres in Contact (75-WA/APM-26) (A) **JI 99**

Axisymmetric Stress Analysis

Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**

Axisymmetric Triangular Elements

An Axisymmetric Finite Element in Natural Coordinates (75-WA/PVP-24) (A) **Ap 98**

Ayorinde, O. A. A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**

Azoury, P. H. Dynamic Pressure Exchanger Performance Estimates (75-Pwr-1) (A) **Ja 110**

B

Bachrach, B. I. A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) (A) **S 100**

Backscatter Ultraviolet Spectrometer

Measure Equatorial Ozone Layer (BTR) **F 44**

Backup Supports

Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Badaliance, R. Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**

Badr, O. The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **JI 87**

Bagshaw, K. W. Icing Problems—Review of Simulated Ice Ingestion Tests (76-GT-128) (A) **Ag 93**

Ballery, J. R. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) (A) **Ja 125**

Bailey, D. A. Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **JI 97**

Bailey, J. A. Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**

Bailey, J. R. Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**; Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

Bailey, R. L. Rotating Shaft Seals: Part 2—The Magnetic Fluid Seal Considered in the Context of Seven Previous Basic Types (76-DET-97) (A) **D 96**

Baines, N. C. A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**

Baird, B. Vibration Detection of Component Operability (76-ENAs-18) (A) **O 95**

Bajura, R. A. Flow Distribution Manifolds (76-FE-7) (A) **Ag 94**

Baker, E. C. *(author)* Sir William Preece, FRS: Victorian Engineer Extraordinary (CB) **D 107**

Baker, J. M. Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**; Control and Automation of Single Generator Combined Cycle Plants (75-Pwr-18) (A) **Ja 112**

Baker, P. H. Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Locomotives (75-WA/RT-12) (A) **F 78**

Bamford, W. H. Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients (75-WA/PVP-3) (A) **Ap 97**

Ball Bearings

Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**

Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) (A) **Ja 121**

Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**

Ball Joints

On a Method for the Study of Constant Velocity Ball Joints (76-DET-66) (A) **D 93**

Ball Motion

Prediction of Ball Motion in High Speed Thrust-Loaded Ball Bearings (75-Lub-1) (A) **Ja 118**

Ball, R. E. Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**

Ball Thrust Bearings

The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) (A) **S 96**

Ballestrasse, M. The Development of A Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**

Balloon Collapse

Balloon Collapse in Ring Spinning (75-Tex-2) (A) **Ja 124**

Ballou, E. V. The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**

Balukjian, H. Improved Specific Fuel Consumption of Open Cycle Gas Turbines by Utilization of Waste Heat (76-GT-45) (A) **JI 92**

Bamberger, E. N. Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 x 10^6 DN (76-LubS-16) (A) **S 97**; A Life Study of Austorged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**

Bamford, W. H. Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-48) (A) **D 103**

Bammert, E. Status Report on Closed-Cycle Power Plants in the Federal Republic of Germany (76-GT-54) (A) **JI 93**

Bammert, K. Gas Turbines Burning Dirty Fuels (76-GT-66) (A) **JI 94**

Band Absorption

Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**

Banerjee, B. N. An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**

Banerjee, S. Coupled Bending-Torsion Vibrations of Rotating Blades (76-GT-43) (A) **JI 91**

Banks, W. C. Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**

Bannister, R. L. Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**

Barash, M. M. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process. Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Bar-Cohen, A. Negev Development—An Integrated Design Project for Mechanical Engineering Students (76-DE-7) (A) **Ag 100**

Bardwell, R. A. Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**

Barges

Development of a Response Monitoring System and Application to a Barge (75-WA/OcE-10) (A) **Ap 91**

Position Control of Pipelaying Barges (75-WA/Aut-18) (A) **Ap 95**

Barker, R. L. Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**; Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) (A) **Ja 125**

Bar-Lev, M. Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**

Barna, P. S. A Simplified Procedure for Designing Supersonic Air Ejectors (76-DET-98) (A) **D 96**

Barnes, G. B. Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**

Barnwell, J. H. Elections to Fellow Grade **F 74**

Baron, S. Don't Forget Sea Solar Power (C) **O 51**; Energy Cycles: Their Cost Interrelationship for Power Generation **Je 22**; More on "Energy Cycles" (C) **O 52**

Barr, A. D. S. A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) (A) **N 101**

Barrett, W. J. DYNA—A New Family of Controls: Development of a New Electronic Governor System for Internal Combustion Engines (76-DGP-7) (A) **Ag 96**

Barsoum, R. S. Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

Barta, R. W. Utility Experience with Regenerative Cycle Combustion Turbines (76-GT-85) (A) **JI 96**

Barthelemy, J. L. A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**

Bartlett, D. A. Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR (75-WA/HT-44) (A) **My 101**

Bartz, W. J. Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**

Basio, R. C. Solar Energy for Space Heating with Heat Pump **O 33**

Basiulis, A. Waste Heat Utilization Through the Use of Heat Pipes (75-WA/HT-48) (A) **My 101**

Bass, L. W. *(author)* Management By Task Force: A Manual on the Operation of Interdisciplinary Teams (CB) **Ag 102**

Bassily, S. F. On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**

Battle, J. L. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**

Baughn, J. W. Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**

Baumgarten, J. R. A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**

Bauschinger Effects

Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**

Bayer, R. G. Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Baz, A. Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**

Beachley, N. H. The Fuel-Saving Potential of Cars With Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**

Beam Analogy

A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**

Beam Column Design

A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula (75-Pet-29) (A) **Ja 116**

Beam Elements

Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**

Beam Functions

On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**

Beams

Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Dynamic Behavior of Ideal Fiber-Reinforced Rigid-Plastic Beams (76-APM-21) (A) **S 100**

Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**

High Frequency Response of Beams (75-WA/APM-18) (A) **Je 120**

Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**
Beard, G. G. Elections to Fellow Grade **Je 106**
Bearing Analysis
Breakthrough in Bearing Analysis (BTR) **Ag 49**
Bearing Materials
Carbon/Graphite Bearings (BTR) **Jl 46**
Bearing Technology
Bearing Technology, '76 (BTR) **Je 53**
Bearings
Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**
Guides for Seals and Bearings (TL) **Ap 106**
A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**
Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 x 10^6 DN (76-LubS-16) (A) **S 97**
Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) (A) **Ja 123**
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**
An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**
Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**
Using Rundown Time as Bearing Life Indicator **My 20**
Beattie, D. R. H. Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**
Beaver Plant Conversion
Beaver Plant-Conversion to Combined Cycle (75-Pwr-29) (A) **Ja 114**
Beck, J. V. Criteria for Comparison of Methods of Solution of the Inverse Heat Conduction Problem (75-WA/HT-82) (A) **My 106**; Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**
Beck, W. E., Jr. Inflight Engine Performance Evaluations (76-GT-70) (A) **Jl 95**
Beckemeyer, R. J. Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**
Becker, S. E. Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**
Beckett, R. Member Interests (C) **Ja 37**
Beckett, R. E. A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**
Beckman, W. A. Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**
Bedini, R. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**
Beese, J. G. Flow Measuring Devices (76-DE-23) (A) **S 90**; The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) (A) **F 87**
Begelinger, A. On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**
Begg, W. S. An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**
Begley, J. A. Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-18) (A) **D 103**
Beglinger, V. Type 3—Sulzer's New 5-MWe Gas Turbine (76-GT-33) (A) **Jl 90**
Behar, J. Extension Springs—Stress at the Body Radius (76-DE-18) (A) **Ag 101**
Beheshti, M. Nuclear Reactions (C) **Ap 47**
Bein, M. Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**
Bejar, M. A. Balloon Collapse in Ring Spinning (75-Tex-2) (A) **Ja 124**
Beliveau, J.-G. Identification of Viscous Damping in Structures from Modal Information (76-APM-36) (A) **O 105**
Belt Drives
An Experimental Study on Variations of Rotational Speed and Flapping Vibrations in Belt Drives (76-DET-102) (A) **D 97**
Belt Speed
On the Effect of Variation of Friction with Belt Speed (75-WA/DE-27) (A) **Mr 106**
Belted Connections
The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**
Belytschko, T. On the Unconditional Stability of an Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**
Benasutti, F. J. Weighing the Risk of Patent Infringement (76-DE-1) (A) **Ag 99**
Bending
Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) (A) **Mr 105**
Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**
Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**
Bending Stresses
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) (A) **Mr 100**
Bending-Torsion Vibration
Coupled Bending-Torsion Vibrations of Rotating Blades (76-GT-43) (A) **Jl 91**
Bendixson, T. *(author)* Without Wheels: Alternatives to the Private Car (CB) **Ja 127**
Benedict, R. P. Generalized Flow Across Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**; Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) (A) **Je 119**
Bennenati, R. A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 106**
Bennett, B. E. The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**
Benson, B. E. *(editor)* Benjamin Henry Latrobe and Moncure Robinson: The Engineer as Agent of Technological Transfer (CB) **Ap 108**
Bentz, J. C. Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**
Ber, A. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**
Bergeles, G. The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes. I-Laminar Flow (75-WA/HT-109) (A) **Je 117**
Bergey, K. H. Carbon Fibers (C) **Mr 45**; **My 39**
Bergquam, J. B. Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**
Berkof, R. S. Mechanism Case Studies III (76-DET-59) (A) **D 92**
Berman, P. A. PACE 260 at Comanche, the First Two Years (76-GT-109) (A) **Ag 91**
Bernier, C. L. *(author)* Abstracting Concepts and Methods (CB) **My 108**
Berry, J. T. The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) (A) **Mr 104**
Berry, W. E. Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**
Bert, C. W. Carbon Fibers (C) **Mr 45**; **My 39**
Bertrand, R. Prediction of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**
Beskos, D. E. A Mechanical Model for Mammalian Tendon (75-WA/APM-20) (A) **Je 121**
Besselievre, E. B. *(author)* The Treatment of Industrial Wastes (CB) **Jl 100**
Bessen, I. I. Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **Jl 91**
Bethune, A. E. Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**
Bevevino, J. W. TEMA and the Nuclear Power Industry (75-Pwr-17) (A) **Ja 112**
Bhadoria, B. S. Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**
Bhardwaj, N. K. A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**
Bhattacharyya, S. Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**, Part 2: (75-Lub-44) (A) **Ja 124**
Bhatti, M. S. Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Bieglow, J. A. Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Jl 87**
Biaxial Stress Fields
The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**
Bice, R. A. Elections to Fellow Grade **O 91**
Bicentennial Engineering Vignette
Of Blanchard's Balloon and Washington's Passport **Ag 20**
Engineering in the New Nation **My 18**
Linking the Nation by Water and Rail **S 20**
Paul Revere Rides Again! **Jl 18**
Samuel Slater Meets Moses Brown and a Textile Empire is Founded **N 16**
Submarine Warfare: General Washington's Secret Weapon **D 18**
The Ups and Downs of Eli Whitney **O 26**
Bicentennial Exposition
Bicentennial Exposition: The Next Hundred Years, preview (NR) **My 64**
Bickle, L. W. Intrinsic Thermocouple Measurement Errors (76-HT-65) (A) **N 89**
Bidding Procedures
OILSIM-A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**
Biffle, J. H. Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**
BIGAS Pilot Plant
Materials Consideration for the BIGAS Coal Gasification Pilot Plant (76-PVP-41) (A) **D 102**
Bi-Gas Process
Bi-Gas Pilot Plant's Ready for Action (ES) **N 14**
Biles, J. E. Energy Conservation Considerations for the Design of New Industrial Plants (76-IPC-Pwr-4) (A) **S 93**
Bilir, O. G. The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**
Bill, R. C. The Politics in Engineering (C) **Jl 41**
Bimetal Rods
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
Binary Plant Cycles
Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **Jl 90**
Bioconversion
Bioconversion Bonanza (ES) **Jl 16**
It Isn't All Good News (ES) **Jl 16**
Bio-Cycles
Coasting Along on a Bio-Cycle (BTR) **D 55**
Bioengineering
An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**
Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**
A Constitutive Equation for Whole Human Blood (75-WA/Bio-12) (A) **Mr 100**
Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**
The Design and Development of a Magnetic Heart Pump (75-WA/Bio-9) (A) **Mr 100**
A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**
Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**
The New Journal of Bioengineering **Jl 80**
A Powered Bipedal Walking Prosthesis (75-WA/Bio-14) (A) **Mr 100**
A Practical Stability Analysis of a Class of Bipedal Locomotion Prostheses (75-WA/Bio-13) (A) **Mr 100**
Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**
Theoretical Basis for Use of Skin Temperature as a Plethysmorgraphic Indicator (75-WA/Bio-6) (A) **Mr 100**
On the Validity of Biomechanical Models of the Low-Back for Weight Lifting Analysis (75-WA/Bio-1) (A) **Mr 99**
Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**
Biogasification
A Bio-Option for the Third World (ES) **Jl 17**

Biological Specimen Holding Facility
Conceptual Design of a Biological Specimen Holding Facility (76-ENAs-30) (A) **O 96**
The Development of A Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**
Biomass
From Plastics to Detergents (ES) **Jl 17**
Pyrogas from Biomass (ES) **Jl 16**
Biomedical Engineering
Advances in Biomedical Engineering (CB) **Ag 104**
Biomedical Experiments Scientific Satellite
Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**
Biomedical Models
On the Validity of Biomechanical Models of the Low-Back for Weight Lifting Analysis (75-WA/Bio-1) (A) **Mr 99**
Biomedical Research
Planning for Biomedical Research in Space: The Visiting Research Scientist (76-ENAs-67) (A) **N 94**
Biophotolysis
Fuel of the Future: Biophotolysis of Water? (BTR) **Mr 54**
Bipedal Locomotion Prostheses
A Powered Bipedal Walking Prosthesis (75-WA/Bio-14) (A) **Mr 100**
A Practical Stability Analysis of a Class of Bipedal Locomotion Prostheses (75-WA/Bio-13) (A) **Mr 100**
Birnbaum, B. H. Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**
Biron, A. Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**
Biswas, S. K. Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**
Biswis, S. Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**
Bittel, L. R. *(reviewer)* Management By Task Force: A Manual on the Operation of Interdisciplinary Teams (CB) **Ag 102**. A Model of Simulated Management Experience for Engineering Managers (75-WA/Mgt-5) (A) **Ap 96**
Biwedges
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**
Black Chrome
Black Chrome Makes an Efficient Collector (ES) **Ja 10**
Black, G. J. *(author)* Canada Goes Metric (CB) **F 88**
Blackburn, L. D. Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**
Blackmore, D. F. An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**
Blackouts
The Great Blackout of '65 (BTR) **F 45**
Blade Dihedral
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Blade Erosion
The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **Jl 95**
Blade Passages
Quasi-Three-Dimensional Numerical Solution of Flow in Turbomachines (76-FE-23) (A) **Ag 96**
Blade Pitch
Calculation of the Quasi Three-Dimensional Flow in a Turbomachine Blade Row (76-GT-56) (A) **Jl 93**
Blade Rows
The Use of Experimental Interstate Data for Matching the Performance of Axial Compressor Stages Having Variable-Setting-Angle Blade Rows (76-GT-42) (A) **Jl 91**
Blade Tip Contact
Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**
Blades
Film Cooling of Gas Turbine Blades: A Study of the Effect of Large Temperature Differences on Film Cooling Effectiveness (76-GT-2) (A) **Jl 86**
The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **Jl 88**
Blading
A Novel Design of Turbine Blading of Extreme Length (76-DET-93) (A) **D 96**
Blair, C. K. Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**; Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**
Blair, M. F. Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **Jl 97**
Blast-Furnace Gases
Gas Turbines Burning Dirty Fuels (76-GT-66) (A) **Jl 94**
Blazowski, W. S. Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**
Bleach, R. D. Craters Produced by High Power Density Lasers (75-WA/HT-49) (A) **My 101**
Block Loading
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**
Blood Pumps
Magnetic Heart Pump (C) **S 48**
Blood Transfer
Improved Blood Transfer (BTR) **Je 58**
Blood Velocity Patterns
Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
Blowdown Heat Transfer
Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**
Blum, E. Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**
Blum, H. A. The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy (75-WA/Pet-3) (A) **My 95**
Board, D. B. Incipient Failure Detection in CH-47 Helicopter Transmissions (75-WA/DE-16) (A) **Mr 105**
Bock, F. C. Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**; Part 2: (75-Lub-44) (A) **Ja 124**
Bockris, J. O. M. *(author)* Energy: The Solar-Hydrogen Alternative (CB) **Je 123**
Bodonyi, R. J. Boundary-Layer Similarity Near the Edge of a Rotating Disk (75-WA/APM-3) (A) **Je 119**
Boehm, A. M. A Regenerable CO and Humidity Control System for Shuttle (76-ENAs-60) (A) **N 93**
Boehm, R. F. Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**; Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**; Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**; Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**; Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**
Bogy, D. B. Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **Jl 99**
Boiler Tubes
Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**
Boilers
The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
Economic Treatment and Operation of Boilers (76-IPC-Pwr-3) (A) **S 93**
The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**
Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**
Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**
Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**
The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**
NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**
Prediction of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**
Boiling Modes
Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Boiling Pools
Transient Behavior of a Volume-Heated Boiling Pool (75-WA/HT-31) (A) **Ap 103**
Boiling Water Reactors
Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**
Bolt Head Design
Criteria for Evaluating Bolt Head Design (76-DE-30) (A) **S 91**
Bolt, S. E. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**
Bolted Connections
On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**
Bolted Joints
On Optimal Bolt Preload (75-WA/DE-14) (A) **Mr 14**
Bolting Materials
Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**
Bolt-Tensioning Monitor
Bolt-Tensioning Monitor (BTR) **O 60**
Boman, L. H. Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78) (A) **My 105**
Bomke, E. H. A Forecast of Power Developments, 1975–2000 (75-Pwr-5) (A) **Ja 110**
Bond Graphs
Bond Graphs of Microeconomic Systems (75-WA/Aut-8) (A) **Ap 93**
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**
Mechanisms as Components of Dynamic Systems: A Bond Graph Approach (76-DET-21) (A) **N 98**
Bonds
Stocks as Investments (PS) **Mr 77**
Boness, R. J. Prediction of Ball Motion in High Speed Thrust-Loaded Ball Bearings (75-Lub-1) (A) **Ja 118**
Boni, A. A. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**
Book, W. J. Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**
Booker, J. F. Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**
Booker, M. K. Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**
Boord, L. F. Combined Short and Long Duration Self-Rescue Breathing Apparatus (76-ENAs-31) (A) **O 96**
Booth, E. T. Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**
Boothe, J. N. *(author)* Cleaning Up: The Cost of Refinery Pollution Control (CB) **D 107**
Boothroyd, G. Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) (A) **Mr 104**
Booton, J. R. Elections to Fellow Grade **F 74**
Boring Process
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**
Borko, H. *(author)* Abstracting Concepts and Methods (CB) **My 108**
Bornstein, N. S. Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **Jl 96**
Bosch Process
The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**
Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**
A Mature Bosch CO_2 Reduction Technology (76-ENAs-14) (A) **O 95**
Boshuizen, C. Metricomment (C) **My 44**
Bosma, R. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**
Bosman, C. Quasi-Three-Dimensional Numerical Solution of Flow in Turbomachines (76-FE-23) (A) **Ag 96**
Bostwick, W. D. Engineering Cooperative Programs Come of Age (EN) **Mr 70**
Botkin, L. A. Design Criteria (C) **Je 47**
Botman, M. Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) (A) **F 83**

Bottaccini, M. R. Facts are Shipshape (C) **D 45**
Bottema, O. On Cage-Plane Motion (76-DET-2) (A) **N 97**
Bottom Entry Nozzles
Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
Bottom Reflooding
Analysis of Pre-rewetting Heat Transfer (75-WA/HT-33) (A) **Ap 103**
Bouffioux, P. COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**
Boundary Layer Flow
Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall (75-WA/FE-20) (A) **Je 110**
Boundary Layer Separation
Onset of Separation in Film Cooling Following a Slot (75-WA/HT-16) (A) **Ap 101**
Boundary Layers
Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients (75-WA/HT-53) (A) **My 101**
Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**
A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **Jl 95**
Prediction of Film-Cooling Effectiveness in an Unsteady Turbulent Boundary Layer (76-HT-28) (A) **O 101**
Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **Jl 93**
Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**
Boutzale, W. Gas Turbine Air Filtration—A Means of Sulfidation Control (76-GT-59) (A) **Jl 93**
Bowed Rods
Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**
Bowen, J. D. Development of an On-Board Oxygen Generating System (76-ENAs-9) (A) **O 93**
Bowley, W. W. Heat Transfer Characteristics of an Impinging Jet in a Crossflow (75-WA/HT-100) (A) **Je 116**; Prediction of the Trajectory of a Turbulent Jet Injected into a Crossflowing Stream (76-FE-8) (A) **Ag 94**
Bowyer, J. Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **Jl 98**
Box Cars
Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Cars and Equipment (75-WA/RT-6) (A) **F 77**
Box Flows
Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**
Boyce, L. Determination and Probabilistic Foundation Forces Resulting from an Unbalanced Turbine (76-GT-120) (A) **Ag 92**
Boyce, M. P. Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**
Boyd, W. K. Corrosion and Deposits From Combustion of Solid Waste Part VI: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**
Bozatli, A. N. Heat Transfer by Contact Between Agitated Particles (76-HT-61) (A) **N 88**
Bradley, W. B. The Effect of Casing Wear on the Burst Strength of Casing (75-Pet-27) (A) **Ja 115**
Bradley, W. E. Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**
Bragg, C. K. Effects of Spindle Centering on Ring-Spinning Tension (76-Tex-2) (A) **N 95**
Braking Reflex
Noise and the Braking Reflex (BTR) **Je 63**
Branch, E. B. Stress Limits for Class 2 and Class 3 Components Under Upset, Emergency, and Faulted Conditions (76-PVP-61) (A) **D 104**
Brandmaier, H. E. Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**
Brandon, H. J. An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**
Brant, V. L. Materials Consideration for the BIGAS Coal Gasification Pilot Plant (76-PVP-41) (A) **D 102**
Bravenec, E. V. The Effect of Electrode Manipulation on Deposit Notch Toughness (75-WA/PVP-18) (A) **Ap 98**
Breathing Devices
Combined Short and Long Duration Self-Rescue Breathing Apparatus (76-ENAs-31) (A) **O 96**
Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**
Breeder Reactors
Advanced Nuclear Energy Systems **My 82**
Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**
Cache of Curries (BTR) **Ap 50**
Experimental Breeder Passes New Milestone (BTR) **My 49**
Fuel Conservation and the Breeder Reactor **Mr 28**
The History and Future of the Breeder Reactor (ES) **Mr 19**
Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**
Breeders
Liscensing the Breeder (ES) **My 16**
Breen, B. P. Modifications to Ormond Beach Steam Generators for NO_x Compliance (75-WA/Pwr-9) (A) **F 86**
Breig, W. F. V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**
Brennen, C. The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**
Brewer, J. W. Bond Graphs of Microeconomic Systems (75-WA/Aut-8) (A) **Ap 93**; Toward a Mathematical Theory of Environmental Monitoring (75-WA/Aut-7) (A) **Ap 93**
Brick-Making Machine
Young ME Helps Lay Foundations in Ghana (NR) **Ap 67**
Bridges (Structural)
Bridges of Britain (CB) **Ja 126**
Brinkman, P. Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Decks (76-ENAs-25) (A) **O 95**
Brittle Fracture
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) (A) **Mr 102**
Brittle Materials
Brittle Materials (C) **Ja 36**
Brock, J. E. Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) (A) **O 104**
Brockenbrough, R. L. Autofrettaged Wire-Wrapped Pressure Vessels (76-PVP-47) (A) **D 103**
Brooke, H. *(editor)* America's Wooden Age: Aspects of Its Early Technology (CB) **F 89**
Brooks, E. Investigation of the Properties of the Annubar, A Flow Measurement Probe (75-WA/FM-2) (A) **Je 118**
Brown, A. The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**
Brown, C. A. Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**
Brown, D. B. *(author)* Systems Analysis and Design for Safety (CB) **N 104**
Brown, D. J. Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
Brown, G. A. Nonlinear Expanders for Diesel-Cycle Application—Part I: An Introduction to Geometric Concepts and Analysis (76-DGP-15) (A) **Ag 98**; Part II: Temporal Effects (76-DGP-16) (A) **Ag 99**; Part III: Design Considerations (76-DGP-17) (A) **Ag 99**
Brown, J. H. U. *(editor)* Advances in Biomedical Engineering (CB) **Ag 104**
Brown, J. T. The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**
Brown, L. E. The Use of Experimental Interstate Data for Matching the Performance of Axial Compressor Stages Having Variable-Setting-Angle Blade Rows (76-GT-42) (A) **Jl 91**
Brown, R. A. Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**
Browne, A. L. Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**
Brueggemann, W. H. Acoustic Transmission of Pipe Wrapping Systems (75-WA/Pwr-7) (A) **F 85**
Brunsvold, A. R. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**
Bryers, R. W. An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**; The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) (A) **My 99**
Bryson, J. W. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**
Btu Meters
Energy Conservation via Btu Meters (BTR) **Ap 50**
Buban, E. E. Combined Short and Long Duration Self-Rescue Breathing Apparatus (76-ENAs-31) (A) **O 96**
Bubble Control
Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Buchalet, C. B. Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients (75-WA/PVP-3) (A) **Ap 97**
Buchberg, H. Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Buckling
Buckling of Thin-Walled Cylindrical Tanks (76-PVP-19) (A) **D 99**
Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**
Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**
Buhl, A. R. The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors (75-WA/NE-7) (A) **F 79**
Bui-Quoc, T. Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**
Building Block Methods
The Building Block Method of Cam Design (76-DE-36) (A) **S 92**
Building Industry
The Building Industry and SI (BTR) **N 48**
Built-Up Edge
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) (A) **Mr 102**
Bulk Materials
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**
Bullock, D. C. The Small, the Simple, the Innovative (C) **F 40**
Bundles
Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**
Buono, D. F. Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **Jl 93**
Buoyancy Cross Flow
Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
Buoyant Jets
A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**
Burbidge, J. L. *(author)* The Introduction of Group Technology (CB) **F 88**
Burgess, M. R. Modern Gas Turbines for Low Btu Gas Fuel Operation (76-GT-117) (A) **Ag 91**
Burgreen, D. *(author)* Design Methods for Power Plant Structures (CB) **N 104**
Burmeister, L. An Automatic Balancer Design for a Vertical-Axis Clothes Washing Machine (76-DE-24) (A) **S 91**
Burmester Mechanism Synthesis
Elimination of the Branch Problem in Graphical Burmester Mechanism for Four Finitely Separated Positions (75-WA/DE-23) (A) **Mr 106**
Burnette, G. W. Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**
Burney, F. A. A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) (A) **Mr 102**
Burnout
Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**
Burns, R. A. Liquid and Solid Radwaste Experience at the Nine Mile Point BWR (75-Pwr-9) (A) **Ja 111**
Burnside, O. H. Acrylic Plastic Spherical Shell Windows

Under Point Impact Loading (75-WA/OcE-6) (A) **Ap 91**

Burrage, R. G. Microprocessor Based Controls for Gas Turbines (76-GT-91) (A) **JI 97**

Burst Strength
The Effect of Casing Wear on the Burst Strength of Casing (75-Pet-27) (A) **Ja 115**

Burton, C. E. Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**

Burton, J. H. Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**

Burton, R. A. An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**; Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**; Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Burton, W. A. High-Pressure Safety at the Lawrence Livermore Laboratory, An Energy Research Facility (76-PVP-66) (A) **D 104**

Burton, W. J. Electric Rates in Today's Economy (75-Tex-9) (A) **Ja 125**

Bury, K. V. *(author)* Statistical Models in Applied Science (CB) My 108

Buschman, H. W. Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**

Bushnell, D. Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**; Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**

Business Environment
New Vs. Old Businesses (WW) **Ap 76**

Buske, N. Nonlinear Expanders for Diesel-Cycle Application—Part I: An Introduction to Geometric Concepts and Analysis (76-DGP-15) (A) **Ag 98**; Part II: Temporal Effects (76-DGP-16) (A) **Ag 99**; Part III: Design Considerations (76-DGP-17) (A) **Ag 99**

Buskirk, R. H. *(author)* Your Career: How to Plan It, Manage It, Change It (CB) **Ag 104**

C

Cabin Pressure Control
New Cabin Pressure Control System for DC-9 Aircraft (76-ENAS-3) (A) **O 92**

Cable Dynamics
An Energy Method Determination of Large Cable Dynamics (76-APM-20) (A) **S 100**

Cadek, F. F. Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**

Caffier, E. CFM56 Turbofan Engines—General Electric/SNECMA Cooperative Engineering Development Program (76-GT-78) (A) **JI 95**

Cage-Plane Motion
On Cage-Plane Motion (76-DET-2) (A) **N 97**

Calahan, D. A. A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

Calcium Peroxide Diperoxyhydrate
The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**

Calculators
The Calculator: Topping its Hidden Talents (BTR) **N 52**
Calculator Users' Guide and Dictionary (CB) **O 106**
Conversation with a Calculator (BTR) **My 52**
Mechanical Design and the Programmable Calculator (76-DET-91) (A) **D 96**
Role of the Programmable Pocket Calculator in Machine Design with Helical Spring Examples (76-DET-101) (A) **D 96**
Updating Our Calculations (C) **My 39**

Caldwell, W. N. Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**

Caledonia, G. E. Laser Beam-Atmospheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**

Calistrat, M. M. Grease Separation Under Centrifugal Forces (75-PTG-3) (A) **Ja 114**

Callahan, W. D. Design and Development of a Medium Speed Integral Angle Compressor Engine (76-DGP-8) (A) **Ag 97**

Calvert, C. S. Program Plan for the Design and Spin Test of Ceramic Blade-Metal Disk Attachments (76-GT-37) (A) **JI 91**

Calvert, W. J. Detailed Flow Measurements in a Four Stage Axial Compressor (76-GT-46) (A) **JI 92**

Cam-Actuated Mechanisms
Dynamic Response of a Cam-Actuated Mechanism With Pneumatic Coupling (76-DET-35) (A) **N 100**

Cam Design
The Building Block Method of Cam Design (76-DE-36) (A) **S 92**

Camarero, R. Unsteady Heat Conduction in Variable Conductivity Soils (75-WA/HT-89) (A) **My 106**

Camblen, R. B. New Design of PWR Reactor Vessel Using Large Forgings (76-PVP-73) (A) **D 105**

Cam-Modulated Linkages
Analytical Design of Cam-Type Angular-Motion Compensators

Campbell, R. M. Nuclear Reactions (C) **Ap 49**

Cams
Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**
The Precision Manufacturing of Cams (76-DE-37) (A) **S 92**

Camshafts
Dynamics of High-Speed Cam Mechanisms with Damped Flexible Followers Driven by Flexible Camshafts (76-DET-63) (A) **D 92**

Cancer
Synthetic Fuels and Cancer (ES) **Ap 23**

Cancer Hazards
OSHA Warns of Possible Cancer Hazards in Labs (EN) **Ap 73**

Cancer Research
Cancer Research at Notre Dame (EN) **My 68**

Cantilever Beams
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**

Cantilever Plates
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**

Carajilescov, P. Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**

Carbon Black
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**

Carbon Dioxide
The Effect of H O/H and CO /CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**
A Mature Bosch CO Reduction Technology (76-ENAs-14) (A) **O 95**
A Regenerable CO and Humidity Control System for Shuttle (76-ENAs-60) (A) **N 93**

Carbon Dioxide Removal
CO and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**
CO Removal from Submarines Atmospheres by IR-45: Feasibility Study (76-ENAs-4) (A) **O 92**

Carbon Fibers
Carbon Fibers (C) **Mr 45**; **My 39**
A New Twist in Carbon Fiber Composites (NB) **Ap 71**

Carbon Monoxide
CO a High-Altitude Planetary Phenomenon (BTR) **Ag 47**
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**

Carbonaceous Ores
Improving Gold Extraction (BTR) **O 58**

Carbon/Graphite Composition
Carbon/Graphite Bearings (BTR) **JI 46**

Career Decisions
Your Career: How to Plan It, Manage It, Change It (CB) **Ag 104**

Career Training
Career Training for Women (EN) **N 66**

Carl, D. E. Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **JI 87**

Carlson, A. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**

Carnes, T. N. Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**

Carr, M. J. *(author)* Critical Surveys of Data Sources: Electrical Magnetic Properties of Metals (CB) **D 106**

Carrubba, E. R. (author) Assuring Product Integrity (CB) **Ap 108**

Carrubba, R. Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **JI 86**

Carrubba, R. V. CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**

Cars
The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**

Carson, W. W. An Energy Method Determination of Large Cable Dynamics (76-APM-20) (A) **S 100**; Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**

Carter, L. G. Cementing Research in Directional Gas Well Completions (75-Pet-30) (A) **Ja 116**

Caruso, W. J. Steam Turbine Diaphragm Failure (75-Pet-49) (A) **Ja 118**

Caruthers, J. E. An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **JI 88**

Casarella, M. J. On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) (A) **Ap 90**

Cascade Channels
A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **JI 95**

Cascade Flow
Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **JI 90**

Cascade Passage
Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **JI 92**

Cascade Tests
Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **JI 91**

Cascades
An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **JI 88**
Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**
A Simple Method for Supersonic Compressor Cascading Performance Prediction (76-GT-64) (A) **JI 94**
A Study on Multi-Element Cascades and Airfoils (75-WA/FE-3) (A) **Je 108**

Casing Collapse
Casing Collapse Performance (75-Pet-41) (A) **Ja 117**

Casing Noise
Application of Cross-Correlation Technique to the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 84**

Casing Treatment
Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**

Casing Wear
The Effect of Casing Wear on the Burst Strength of Casing (75-Pet-27) (A) **Ja 115**

Casings
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**

Cassin, R. Robert Redford vs. the Average Engineer (C) **My 40**

Cast Steels
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**

Castelli, V. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**; Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**

Casterline, J. E. Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**

Catalysts
New Catalysts for Synthoil (BTR) **N 53**

Catalytic Hydrogenation
Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**

CATATHERMAL® Combustion

CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**

Cathode Ray Tubes
Quick on the Draw (BTR) **Je 60**

Cato, G. A. Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**

Catton, I. Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**; Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**; Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**; Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**; Large Amplitude Cellular Convection (76-HT-32) (A) **O 101**

Cavanaugh, W. T. How Do We Decide? **Ag 34**

Cavitating Inducers
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**

Cavitation
Inception of Cavitation from a Solid Surface (75-WA/DE-13) (A) **Mr 104**
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) (A) **F 85**

Cavities
Numerical Studies of Diffusively Induced Convection in a Tilted Square Cavity (76-HT-47) (A) **O 103**

Cavity Flows
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**
Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**

Cavity-Type Radiometers
Heat Transfer Analysis of a Cavity-Type Solar Radiometer (75-WA/Sol-2) (A) **Mr 92**

Cellular Convection
Large Amplitude Cellular Convection (76-HT-32) (A) **O 101**

Cement
Rice-Hull Cement (BTR) **Je 61**

Cemented Carbide Tools
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**

Cementing
Cementing Research in Directional Gas Well Completions (75-Pet-30) (A) **Ja 116**

Central Receivers
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) (A) **Mr 92**

Centrifugal Compressors
A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) (A) **Ag 95**
The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **JI 98**
Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**
Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **JI 96**
Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**

Centrifugal Forces
Grease Separation Under Centrifugal Forces (75-PTG-3) (A) **Ja 114**

Centrifugal Pumps
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**

Centrifugal Turbomachinery
Three-Dimensional Boundary-Layer Computation on the Stationary End Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**

Centrode Curves
On the Algebra of Four-Bar Linkage Centrode Curves (76-DET-13) (A) **N 98**

Ceramic Blades
Program Plan for the Design and Spin Test of Ceramic Blade-Metal Disk Attachments (76-GT-37) (A) **JI 91**

Ceramic Components
A Hybrid Ceramic-Metal Combustion System (76-GT-22) (A) **JI 89**

Ceramic Engineers
Shortage of Ceramic Engineers (EN) **Je 81**

Ceramics
Needed: More Ceramic R&D (BTR) **O 55**

Certification Programs
AIPE Swamped with Applications for Certification **Je 78**
A New Certification Program (NB) **Mr 57**
A New Recertification Program (NB) **Ap 71**
Proposed Bill Would Regulate Voluntary Standards **S 81**

Cervical Spine
Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**

Cesium Vapor Cycle
A Cesium Vapor Cycle for an Advanced LMFBR (75-WA/Ener-5) (A) **Mr 96**

Chace, M. A. A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

Chaffin, D. B. On the Validity of Biomechanical Models of the Low-Back for Weight Lifting Analysis (75-WA/Bio-1) (A) **Mr 99**

Chaiken, R. F. Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**

Chain Mechanisms
A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**

Chakraborty, J. Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**

Chambers, J. W. Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**

Chan, A. L. Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**

Chandran, K. B. The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**

Chandrasekhara, D. V. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**

Chang, C. Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**

Chang, N. Making Better Musical Instruments from Graphite Composites **Mr 25**; Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**

Chang, Y. R. Dynamic Characteristics of Contact-Separation in Mechanisms (76-DET-14) (A) **N 98**

Chang, Y. W. Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

Channel Flow
Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**
Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving gwall (75-WA/FE-20) (A) **Je 110**
Symmetrical Laminar Channel Flow with Wall Suction (75-WA/FE-6) (A) **Je 108**

Channels
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**

Chantaramungkorn, K. An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**

Chapman, J. D. *(editor)* Oxford Regional Economic Atlas: The United States and Canada (CB) **D 106**

Chapman, M. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**

Charpy V-Notch
Prediction of Toughness Behavior Using Precracked Charpy Specimens (75-Pet-25) (A) **Ja 115**

Chatter
Metal Cutting Dynamics With References to Primary Chatter (75-WA/Prcd-31) (A) **Ap 105**

Chattopadhyay, S. Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**; Magnetoelastic Buckling and Vibration of a Rod Carrying Electric Current (75-WA/APM-28) (A) **JI 99**

Chaudhary, O. P. Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Chauvin, J. Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **JI 98**

Che, S. C. The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**

Check Valves
Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**

Chemical Effects
Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**

Chemical Oceanography
Chemical Oceanography (CB) **Ag 104**

Chemical Operating Problems
Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**

Chen, C. C. Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**

Chen, C. J. Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**

Chen, E. P. Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

Chen, F. Y. Dynamic Characteristics of Contact-Separation in Mechanisms (76-DET-14) (A) **N 98**; Dynamic Response of a Cam-Actuated Mechanism With Pneumatic Coupling (76-DET-35) (A) **N 100**; Mohr's Circle and Its Applications to Engineering Design (76-DET-99) (A) **D 96**

Chen, J. Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**

Chen, J. C. Heat Transfer to Tubes in Fluidized Beds (76-HT-75) (A) **N 90**; Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**

Chen, J. C. H. A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**

Chen, M. J. Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**

Chen, S. S. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**

Chen, S. S. H. Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) (A) **Mr 105**

Chen, T. S. Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**; The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**

Chen, Y. Elections to Fellow Grade **Ag 88**

Cheng, H. S. Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**

Cheng, L. Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **JI 98**

Cheng, Y.-T.E. Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**

Chern, J. M. Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**

Chester, L. B. Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) (A) **Mr 106**

Cheung, T. Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**

Chiang, C. C. Closed Form Design Solutions for Box Type Heat Exchangers (75-WA/DE-15) (A) **Mr 106**

Chiba, M. Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **JI 93**

Chip Formation
On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**

Chip-Removal Process
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Chiu, Y. P. Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) (A) **Ja 121**; Approximate Calculation of Power Loss in Involute Gears (75-PTG-2) (A) **Ja 114**

Chmielewski, R. Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **JI 98**

Cho, S. M. Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**

Chohan, S. M. Automated Dynamic Load Simulator—A Useful Tool in Evaluating Cranking System Design (76-DE-13) (A) **Ag 100**; Optimizing Designs of Machines and Mechanisms by Functional Approach (76-DET-15) (A) **N 98**

Chon, W. Y. Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in

the Unwetted Region (75-WA/HT-32) (A) **Ap 102**

Chopin, M. H. Advanced Composite Fan Blade Flight Evaluation Program (76-GT-75) (A) **JI 95**

Chou, S. I. Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Chow, L. S. H. Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**

Chrisman, B. Developing a New Series of Stationary Vee Gas Engines (76-DGP-14) (A) **Ag 98**

Christenson, B. C. The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**

Chromic Acid
Advance in Waste Recovery (BTR) **N 47**

Chromium Additives
Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **JI 96**

Chronowski, R. A. NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**

Chu, S. C. A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**

Chucking Methods
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**

Chun, M. H. Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**

Chung, B. T. F. Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**; Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**

Chung, K. C. A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**

Cigal, A. L. "Do It Yourself" Maintenance—An On-Site Approach to Lower Costs and Improved Equipment Availability (76-GT-108) (A) **Ag 90**

Circular Arc Gears
State of Art at Research Level in the Design of Wildhaber-Movikov Circular Arc Gears (76-DET-78) (A) **D 94**

Circular Air Jets
The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**

Circular Cylinders
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**

Circular Cylindrical Shells
Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Circular Plates
A Singularity Approach to Circular Plates (76-DE-28) (A) **S 91**

Circular Tubes
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**

Circulation Rate Control
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**

Citerley, R. L. Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**

Citron, S. J. Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**

Civil Engineering
Handbook of Environmental Civil Engineering (CB) **F 88**

Clark, D. C. Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**

Clark, G. W. Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**

Clarke, S. F. Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**

Clausing, A. M. Optimum Sensor Location in Transient Calorimeters (76-HT-63) (A) **N 89**

Clayton, B. R. Metricomment (C) **My 44**

Clayton, D. G. More Metricomment (C) **O 50**

Clayton, F. I. Heatshield Sizing for Erosive Environments (76-ENAs-36) (A) **O 97**

Clean Fuels
Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Clearance Connections
Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**

Clearance Ratios
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**

Clearances
Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**

Clements, R. M. Toward Laser Engines (C) **D 46**

Climatic Conditions
Numerical Simulation of the Effect of Climatic Conditions on Heat Transfer from a Building (76-HT-71) (A) **N 90**

Clinch River Plant
Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**

Clinical Biomechanics
Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**

Clomburg, L. A., Jr. Convection in an Enclosure-Source and Sink Located Along a Single Horizontal Boundary (76-HT-22) (A) **O 100**

Closed Circuit Systems
A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **JI 94**

Closed Form Solutions
Closed Form Design Solutions for Box Type Heat Exchangers (75-WA/DE-15) (A) **Mr 106**

Closed-Cycle Gas Turbines
Status Report on Closed-Cycle Power Plants in the Federal Republic of Germany (76-GT-54) (A) **JI 93**
Vaporization of LNG with Closed-Cycle Gas Turbine (76-GT-38) (A) **JI 91**

Closed Loop Control
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**

Closure Heads
Design of a Nuclear Reactor Pressure Vessel and Closure Head for Maritime Application (76-PVP-2) (A) **D 97**

Clothes Washing Machine
An Automatic Balancer Design for a Vertical-Axis Clothes Washing Machine (76-DE-24) (A) **S 91**

Cloutier, P. D. Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**

Clutch/Brake Assembly
Single Coil Clutch/Brake Assembly (BTR) **Ag 48**

Coal
Better Days for Coal? (ES) **Mr 18**
Can Coal Fly Jets? (BTR) **D 53**
Coal Still Favored (ES) **My 17**
Coal-to-Gasoline Process (BTR) **Je 53**
Cost of Methanol Production from Coal, Waste and Wood (ES) **JI 17**
Energy Forecast: Coal and Sunny (NR) **D 66**
From Oil to Coal (ES) **Ap 23**
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**
The Industrial Power Engineer Battles the Energy Crunch **JI 76**
Price and Availability of Western Coal in the Midwestern Market (76-IPC-Pwr-7) (A) **S 94**
Solicited Signatures Support Nuclear Power and Coal (NR) **Mr 65**
Taking the Lumps Out of Coal (ES) **D 17**
U.S. Coal and the Electric Power Industry (CB) **Je 123**

Cold Air Injection
The Effects of Mainstream Turbulence Intensity and Pressure Gradients on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**

Coal Chemistry
The Chemistry of Coal (ES) **My 17**

Coal Cleaning
Cleaning Pennsylvania Coal (ES) **Ja 11**

Coal Combustors
Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**

Coal Conversion
Overview of the Government's Programs in Coal Conversion, Research and Development (76-PVP-16) (A) **D 99**

Coal Firing
Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**

Coal Furnace
Comeback for the Coal Furnace (BTR) **Mr 55**

Coal Gas
Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (A) **F 80**
Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Coal Gasification
An Advanced Coal Gasification System for Electric Power Generation (75-Pwr-6) (A) **Ja 111**
Coal Gasification: Stepping Up the Pace (BTR) **N 45**
The Combustion Engineering Coal Gasification Program (75-Pwr-8) (A) **Ja 111**
In Situ Coal Gasification—A Unique Means of Energy Recovery **Mr 20**
Materials Consideration for the BIGAS Coal Gasification Pilot Plant (76-PVP-41) (A) **D 102**
Materials Considerations in the HYGAS Process (76-PVP-60) (A) **D 101**
Pipe Erosion Problem in Coal Gasification (BTR) **O 60**

Coal Laws
Coal Laws Past and Present (ES) **O 19**

Coal Mining
Underground Mining Technologies Compared (BTR) **D 54**

Coal Mining Capacity
Expanded Mine Capacity Forecast (ES) **Mr 18**

Coal Production
670 Million Tons of Coal in '76 (ES) **O 18**

Coal Pyrolysis
Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Coal Resources
There's Coal in Them There Hills (ES) **N 14**

Coal Slurry Pipeline
Salty Slurry Lines (ES) **S 19**

Coal Strip Mines
Satellite "Sees" Strip Mines (BTR) **O 57**

Coal-Derived Fuels
High NO_x from Coal-Derived Fuels (BTR) **JI 50**

Coal-Fired Gas Turbines
Coal-Fired Gas Turbines (BTR) **Je 56**

Coal-Fired Generating Units
Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 86**

Coan, E. V. *(editor)* World Directory of Environmental Organizations (CB) **Je 123**

Coating Systems
Protective Coating Systems (IF) **Je 66**

Coating Technology
Coating Technology for the Marine Gas Turbine Airfoil Application (76-GT-111) (A) **Ag 91**

Coban, A. Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**

Cobble, M. H. Simulation of a Small Solar-Power Station (75-WA/Sol-4) (A) **Mr 93**

Cochran, B. T. Mine Rescue Team Helmet (76-ENAs-69) (A) **N 95**

Codes and Standards
ASME Committee on Nuclear Quality Assurance **Je 124**

Coe, H. H. Bending Stresses in Spherically Hollow Ball Bearings and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

Coiled Pipes
An Analytical Study of a Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**

Colbourne, J. R. Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) (A) **N 101**

Colcord, A. R. Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Cold End Corrosion
A Practical Review of the Cause and Control of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers (75-WA/CD-8) (A) **My 99**

Cold Flow
The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**

Cold Jets
Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**

Cold Weather Operations
Gas Turbine Operation in Extreme Cold Climates

(76-GT-127) (A) **Ag 93**
Problems Associated with Cold Weather Operation of Gas Turbines (76-GT-129) (A) **Ag 93**
Coldeway, R. W. The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**
Cole, B. N. Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**
Cole, N. C. Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**
Colladay, R. S. Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**
Collection Efficiency
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**
Collective Bargaining
Faculty Unionization and Collective Bargaining (CB) **Ap 107**
College Graduates
Jobs in the Private Sector (EN) **S 70**
College Placement Council
Job Offers Pick Up—But Questions Remain (EN) **My 68**
Job Outlook for 1976: Demand High for Top ME's (EN) **F 58**
College Recruiting
Recruiting Activity Brisk—Engineering Offers Up (EN) **O 70**
Colombo, G. V. Experimental Study of the Constituents of Space Wash Water (76-ENAs-11) (A) **O 94**
Colpin, J. Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **Ji 90**
Columns
Creep Buckling of Imperfect Columns (76-APM-10) (A) **S 99**
Colver, G. M. Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Combinatorial Optimization
Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms Part 1: Theory (76-DET-24) (A) **N 99**, Part 2: Applications (76-DET-25) (A) **N 99**
Combined Cycle Power Plants
Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**
Control and Automation of Single Generator Combined Cycle Plants (75-Pwr-18) (A) **Ja 112**
Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **Ji 87**
Combined Cycles
Beaver Plant-Conversion to Combined Cycle (75-Pwr-29) (A) **Ja 114**
A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications (75-Pwr-30) (A) **Ja 114**
Combustion
Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**
Combustion Bomb
R&D "Combustion Bomb" (BTR) **N 46**
Combustion Chambers
An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**
Combustion Engineering
The Combustion Engineering Coal Gasification Program (75-Pwr-8) (A) **Ja 111**
Combustion Engines
Automated Dynamic Load Simulator—A Useful Tool in Evaluating Cranking System Design (76-DE-13) (A) **Ag 100**
Combustion Flows
Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**
Combustion Noise
Combustion Noise in Industrial Burners (75-WA/Fu-5) (A) **My 94**
Combustion Optimization
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**
Combustion Processes
An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **Ji 88**
Combustion Systems
Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**
Combustion Turbines
Utility Experience with Regenerative Cycle Combustion Turbines (76-GT-85) (A) **Ji 96**
Combustors
Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **Ji 87**
Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **Ji 86**
A Critical Review of NO_x Correlations for Gas Turbine Combustors (75-WA/GT-7) (A) **F 80**
A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**
Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**
Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**
Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (A) **F 80**
Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**
A Simple Gas Turbine Combustor NO_x Correlation Including the Effect of Vitiated Air (76-GT-5) (A) **Ji 86**
A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **Ji 87**
A Simple Variable-Geometry Combustor for the Automotive-Turbine Engine (76-GT-11) (A) **Ji 87**
Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Ji 87**
COMETHE III-H
COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**
Commercial Boilers
The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**
Commercial Standards
LMFBR® Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**
Commercial Submarinees
The Growing Market for Commercial Submarines **O 28**
Communications
Communications and Data Management (CB) **D 107**
Complex Systems
Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques (75-WA/Aero-9) (A) **My 99**
Compliant Bearings
An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**
Compliant-Surface Bearings
An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**
Component Mass Centers
Minimizing Assembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers
Component Mode Analysis
Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**
Component Operability
Vibration Detection of Component Operability (76-ENAs-18) (A) **O 95**
Components
Stress Limits for Class 2 and Class 3 Components Under Upset, Emergency, and Faulted Conditions (76-PVP-61) (A) **D 104**
Composite Construction Materials
Composite Construction Materials Handbook (CB) **N 104**
Composite Half Planes
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**
Composite Inlays
Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **Ji 89**
Composite Laminates
Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**
Composite Media
Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**
Composite Rods
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**
Composite Slabs
Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**
Compressed Gas
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**
Compressible Flow
Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**
Compressible Turbulent Boundary Layers
On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients (75-WA/HT-53) (A) **My 101**
Compression
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**
Compression Ignition Engines
Hydrogen as a Fuel in Compression Ignition Engines **Ap 34**
Compressor Blades
Design of an Annular Channel for Testing Highly Loaded Compressor Blades: Comparison Between Theory and Experiments (76-GT-79) (A) **Ji 96**
Optical Determination of Rotating Fan Blade Deflections (76-GT-48) (A) **Ji 92**
Compressor Bladings
Secondary Flows in Compressor Bladings (76-GT-57) (A) **Ji 93**
Compressor Channels
Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **Ji 96**
Compressor Discharge
Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) (A) **Je 108**
Compressor Engines
Design and Development of a Medium Speed Integral Angle Compressor Engine (76-DGP-8) (A) **Ag 97**
Compressor Impellers
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) (A) **Ag 95**
Compressor Interactions
Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Compressor Rotor Blades
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**
Compressor Surge Limits
Experimental Evaluation of an Axial-Flow Transonic Compressor (76-GT-34) (A) **Ji 90**
Compressors
The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **Ji 98**
Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**
Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) (A) **F 81**
New Rotary Vane Compressor (IF) **O 64**
Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**
Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model (75-WA/GT-10) (A) **F 82**
Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**
Computational Methods
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**
Computer Abuse
Computer Abuse: A Question of Ethics (CT) **My 74**
Computer Codes
SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**

Computer Control
An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**
Computer Design
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**
Computer Methods
An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions (75-WA/DE-11) (A) **F 87**
Symposium on Applications of Computer Methods in Engineering (NR) **D 70**
Computer Modeling
Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**
Computer Models
OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**
Computer Programming
Computer Programming Handbook (CB) **F 89**
Computer Programs
Application of a Finite Element Computer Program for Studying Failures and Affecting Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**
Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**
Problems in Using a Program (CT) **Je 86**
Verification and Qualification Activities in Japan of Inelastic Analysis Computer Programs (76-PVP-44) (A) **D 102**
Computer Science
Encyclopedia of Computer Science (CB) **N 104**
Computer Simulation
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**
Computer Software
Engineering Software—A National Resource (CT) **Ag 70**
Pre- and Post-Processors are Needed (CT) **Ja 68**
The Software Center: How it Works (CT) **D 80**
Software Development, Maintenance, and Dissemination (CT) **Ap 78**
Computer System
Easy-Growth Computer System (BTR) **Ja 42**
Computer Technology
Computer Technology to Highlight ASME Winter Annual Meeting **O 82**
Computer-Aided Design
Computer-Aided Design Analysis and Selection of Heat Exchanger with Phase-Changing Media (75-WA/PID-5) (A) **My 97**
Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**
Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
Flcs-1) (A) **Je 114**
KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**
Computer-Based Graphics Systems
Quick on the Draw (BTR) **Je 60**
Computerized Synthesis
Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**
Computers
Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**
Computer Review (CB) **Ag 104**
Computer-Aided Design (IF) **Mr 58**
Computer-Aided Information Retrieval (CB) **F 88**
Computer-Controlled Switchyard (IF) **G 54**
Education Means Quality (CT) **N 72**
The Federal Government and the Computer (CT) **O 80**
Foresee Computer-Run Homes (BTR) **Mr 50**
High-Performance Large-Scale Computer (BTR) **Ag 53**
Interactive Engineering (BTR) **My 47**
Principles of Digital Computer Design (CB) **Ag 104**
Vegetable Growing by Computer (IF) **Ag 56**
Concentric Orifices
Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles (75-WA/FE-19) (A) **Je 110**
Concentric Shaft Speed Reducers
In-Line Reduction (BTR) **N 49**
Concept Sampling System
A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**
Condensate Treatment
Treatment of Condensate Returns at Industrial Plants (76-IPC-Pwr-1) (A) **S 93**
Conduction
Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**
Evaluation of Unsteady State Conduction Heat Transfer by a Noniterative Finite-Difference Method (76-HT-72) (A) **N 90**
Conduits
Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**
Cone-Cylinder Junction
Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**
Confinement
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**
Congestion
Congestion and How to Cope With It (BTR) **Ja 42**
Congress
The Fighting 94th (WW) **N 70**
Toward a More Efficient Congress (WW) **Je 84**
Congressional Fellows
Congress Lauds Fellows **Je 97**
Congressional Fellows Give Their Views: Two Sides of the U.S. Congress (NR) **My 62**
Search Opens for 1977 Congressional Fellows **Ap 82**
Congressional Perspectives
Public Sector Technology Transfer—A Congressional Perspective (75-WA/Aero-1) (A) **My 98**
Conn, W. M. Direct Raw Sewage Reverse Osmosis: Reclamation of Waste Water at San Diego (76-ENAs-45) (A) **O 97**
Conservation
Conservation and Energy Organizations (WW) **O 78**
Conservation Programs
An EPIC Booklet (ES) **Ap 23**
Constance, J. D. How to Become A Professional Engineer **S 24**
Constant Difference Modification
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**
Constant Velocity Coupling
A New Constant Velocity Coupling (76-DET-33) (A) **N 100**
Constant Velocity Joints
On a Method for the Study of Constant Velocity Ball Joints (76-DET-66) (A) **D 93**
Constant Volume Combustion
Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**
Constantinescu, V. N. Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**
Constant-Rate Fluid-Delivery
Constant-Rate Fluid-Delivery (BTR) **O 61**
Constitutive Equations
A Constitutive Equation for Whole Human Blood (75-WA/Bio-12) (A) **Mr 100**
Constitutive Relations
Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**
Constraints
Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**
Construction
Housing Behind '76 Construction Gain (NB) **S 69**
Value Analysis in Design and Construction (CB) **O 106**
Construction Codes
Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants (75-Pwr-15) (A) **Ja 112**
Construction Controls
Construction Recovery in '76 (NR) **F 57**
Construction Management Guide
Simplified Guide to Construction Management for Architects and Engineers (CB) **S 103**
Construction Materials
Composite Construction Materials Handbook (CB) **N 104**
Consumerism
Developing Safe Products **Je 31**
Contact Fatigue
Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**; Part 2: (75-Lub-44) (A) **Ja 124**; Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**
Contact Freezing
Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**
Contact Loss
A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**
Contact Seals
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**
Contact Separation
Dynamic Characteristics of Contact-Separation in Mechanisms (76-DET-14) (A) **N 98**
Contact Stress
Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) (A) **N 101**
Container Flat Car
An Investigation of Container Flat Car Ride Quality (75-WA/RT-7) (A) **F 78**
Contaminated Lubricants
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**
Contingency Planning
Using RMS Techniques for Designing RMS* and Operating Hazardous Facilities **N 21**
Continuing Education
Continuing Education Unit—What Is It? (EN) **Ja 64**
Engineers Involved in Continuing Education (CB) **Ap 108**
Continuously Variable Transmission
An Automotive CVT **O 38**
The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**
The Selection and Optimization of a Continuously Variable Transmission for Automotive Use (75-WA/Aut-16) (A) **Ap 94**
Contour Line Methods
Using the Contour Line Method of Representing Failure Criteria as a Design Aid (76-DET-75) (A) **D 94**
Contraction Velocity
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**
Contra-Rotating Turbines
A Study of the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines (75-WA/FE-18) (A) **Je 110**
Control Circuits
Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**
A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits (75-WA/Aut-22) (A) **Ap 95**
Control Rod Drive Mechanism
Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**
Control Systems
An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**
Controllers
Advances in Single-Loop Controllers **Ja 67**
Convection
Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**
Combined Radiation-Convection for a Real Gas (76-HT-58) (A) **O 104**
Convection in an Enclosure-Source and Sink Located Along a Single Horizontal Boundary (76-HT-22) (A) **O 100**
Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**
Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**

Large Amplitude Cellular Convection (76-HT-32) (A) **O 101**
Numerical Studies of Diffusively Induced Convection in a Tilted Square Cavity (76-HT-47) (A) **O 103**
The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**

Convective Heat Transfer
Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**
Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**

Convective Mass Transfer
Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**

Convergent-Divergent Nozzles
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

Convergent Narrow Gaps
Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**

Convergent Turbine Cascades
Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **JI 90**

Conveyors
Self-Accumulating Conveyor (IF) **Je 66**

Conway, L. On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Cook, C. Cementing Research in Directional Gas Well Completions (75-Pet-30) (A) **Ja 116**

Coolant Layers
Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**

Coolant Loops
Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

Coolants (LMFBR)
"Hears" Pressure Changes in LMFBR Coolant (BTR) **F 48**

Cooling Methods
Cooling Methods for Aircraft Electronics Equipment (76-ENAs-51) (A) **N 92**

Cooling Ponds
Sizing a Cooling Pond for a Power Plant (75-WA/HT-63) (A) **My 103**

Cooling Systems
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**
Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**
Power Spray Cooling-Unit and System Performance (75-WA/Pwr-8) (A) **F 84**
Solar Heating and Cooling: Engineering, Practical Design, and Economics (CB) **Ap 107**

Cooling Towers
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**
Analysis of Large Dry Cooling Towers with Spine-Fin Heat Exchange Elements (75-WA/HT-46) (A) **My 100**
Comparison of Different Combinations of Wet and Dry Cooling Towers (75-WA/Pwr-10) (A) **F 86**
Counter-Flow Evaporative Cooling Tower Performance Modeling and Verification (75-WA/HT-43) (A) **My 100**

Cooper, G. P. Elections to Fellow Grade **My 91**; More on "The Real Energy Crisis" (C) **Ja 35**

Cooper, W. E. Nuclear Reactions (C) **Ap 45**

Cooperative Education
Engineering Cooperative Programs Come of Age (EN) **Mr 70**

Coppo, R. M. Design of a Nuclear Reactor Pressure Vessel and Closure Head for Maritime Application (76-PVP-2) (A) **D 97**

Copson, H. D. Real Nostalgia Trip (C) **Ag 42**

Coral
A New Use for Coral (EN) **Mr 72**

Corder, A. *(author)* Maintenance Management Techniques (CB) **S 103**

Core Cooling
Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**

Core Flow
Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **JI 95**

Cornell, R. W. Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) (A) **F 82**

Corneo-Scleral Shell
Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**

Corona Discharge
Heat Transfer in a Corona Discharge **O 44, D 47**
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**

Coronary Arteries
Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**

Coronary Detection
Detecting a Coming Coronary (BTR) **Mr 51**

Corrosion Control
A Test Program to Provide an Economic Evaluation of Techniques to Control Corrosion in Gas Turbines (76-GT-87) (A) **JI 96**

Corrosion and Deposits
Corrosion and Deposits From Combustion of Solid Waste Part VI: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**
The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**
Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) (A) **My 99**
A Practical Review of the Cause and Control of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers (75-WA/CD-9) (A) **My 99**

Corrosion Protection
Durable Paint Job (BTR) **D 50**

Corrosive Environment
Wearing Well in Corrosive Environment (BTR) **My 49**

Corum, J. M. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**

Cost Optimizations
Cost Optimization of Solar Heating of Buildings in Northern Regions (75-WA/Sol-9) (A) **Mr 93**

Costello, G. A. Radial Expansion of Impacted Helical Springs (75-WA/APM-25) (A) **JI 98**

Costello, K. W. Price and Availability of Western Coal in the Midwestern Market (76-IPC-Pwr-7) (A) **S 94**

Cotton
Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**
Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) (A) **Ja 125**

Cotton Dust
Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**

Cotton Silver Drafting System
A Unique Cotton Silver Drafting System (76-Tex-4) (A) **N 95**

Cotton Yarns
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**
The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**

Coulter, D. M. Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**

Countercurrent Flow
Design of Particulate Direct Contact Heat Exchanger Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**

Counterflow Evaporative Cooling
Counter-Flow Evaporative Cooling Tower Performance Modeling and Verification (75-WA/HT-43) (A) **My 100**

Coupled Tubing Joints
An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**

Coupler Curves
A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**

Couplings
A New Constant Velocity Coupling (76-DET-33) (A) **N 100**

Cousins, S. J. A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**

Coutinho, J. de S. Risk Management Technique for Design and Operation of Facilities and Equipment (75-WA/Aero-5) (A) **My 98**; Techniques Using RMS for Designing RMS and Operating Hazardous Facilities **N 21**

Couts, W. H., Jr. Progress in Manufacturing Practices for a Warm-Worked Superalloy (76-GT-110) (A) **Ag 90**

Cover Plates
Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**

Cox, J. E. Getting the Inside Scoop on Federal R&D **Ag 37**; Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**

Cox, T. S. The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**

Coy, J. J. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**

Coyne, J. E. Progress in Manufacturing Practices for a Warm-Worked Superalloy (76-GT-110) (A) **Ag 90**

Crack Growth
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) (A) **F 82**
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**
The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**
Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**

Crack Propagation
Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**
Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Cracks
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**
Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**

Cracks
Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**

Cramer, J. J. An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**

Crane, W. B. Up-to-Date with ME (C) **Ja 37**

Crank Mechanisms
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**

Cranking System Design
Automated Dynamic Load Simulator—A Useful Tool in Evaluating Cranking System Design (76-DE-13) (A) **Ag 100**

Crank-Rocker Mechanisms
Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**

Cranks
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**

Crank-Slider Mechanisms
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**

Craters
Craters Produced by High Power Density Lasers

(75-WA/HT-49) (A) **My 101**

Cravalho, E. G. Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) (A) **O 98**

Cravens, E. W. The Role of Shuttle in Health Care Systems Development for Space Stations (76-ENAs-29) (A) **O 96**

Crawford, M. Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall (75-WA/FE-20) (A) **Je 110**

Crawford, M. E. Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**

Creep

An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) (A) **S 100**

Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) (A) **Je 111**

Creep Analysis

Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**

Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**

Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

Creep Behavior

Creep Behavior of SMA Type Weld AL With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**

Creep Buckling

Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

Creep Buckling of Imperfect Columns (76-APM-10) (A) **S 99**

A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Creep Deformation

Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**

Creep Fatigue

The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**

Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**

Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**

Creep Properties

Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**

Creep Rupture

On the Creep Rupture of a Tube and a Sphere (75-WA/APM-4) (A) **Je 119**

Creep Testing

Creep Testing at Variable Temperature and Load. Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**

Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

Crim, W. M. ERDA and the Advanced Power Conversion Program **My 24**

Crisp, J. D. C. On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**

Critelli, F. X. Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **JI 90**

Critical Heat Flux

Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**

Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Croft, M. Control of a Gas Turbine HTGR (76-GT-97) (A) **JI 98**

Cronin, R. H. Still More on Nader (C) **Je 48**

Crooker, T. W. The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**. The Role of Fracture Mechanics in Fatigue Design (76-DE-5) (A) **Ag 100**

Crop Combustion

The Energy Farm (BTR) **F 45**

Cross Correlation

Application of Cross-Correlation Technique to the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 84**

Cross, F. L., Jr. *(editor)* Industrial Plant Siting (CB) **JI 101**

Cross, L. R. . . . and a Reply **JI 41**. *see also* A Protest (C) **JI 40**

Crossflow

Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**

Heat Transfer Characteristics of an Impinging Jet in a Crossflow (75-WA/HT-100) (A) **Je 116**

A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **JI 95**

Some Aspects of Gas-Particle Jets in a Cross Flow (75-WA/HT-5) (a) **Ap 99**

Crossflowing Streams

Prediction of the Trajectory of a Turbulent Jet Injected into a Crossflowing Stream (76-FE-8) (A) **Ag 94**

Crosshead Engines

Proven Operational Performance of Low-Speed Two-Stroke Crosshead Engines in Marine Service (76-DGP-11) (A) **Ag 98**

Crow, L. I. Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**

Crowe, C. T. The Particle-Source-In-Cell (PSI-Cell) Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**

Cryogenic Process Removal

Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**

Cryogenic Temperature

Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) (A) **O 98**

Cryosurgery

Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**

Crystalline Materials

Tailor-Making Materials for Specific Properties (BTR) **D 52**

Cudlin, J. J. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**

Cummins, C. L., Jr. *(author)* Internal Fire (CB) **D 107**

Cunningham, S. S. The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**

Cured Resins

The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**

Current Profile Energy

Current Profile Energy and Ocean Moorings (75-WA/OcE-5) (A) **Ap 91**

Curtis, A. R. Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**

Curve Fitting Techniques

Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**

Curved Beams

Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Curved Surfaces

The Effectiveness of Two-Dimensional Film-Cooling Over Curved Surfaces (76-HT-31) (A) **O 102**

Cutting

The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process. Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**. Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Cutting Force Models

Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**

Cutting Tool Materials

Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**

Cutting Tools

Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**

Tools That Stay Sharp (BTR) **N 53**

Cybernetic Organisms

The Cyborgs are Coming (BTR) **N 51**

Cyclic Distortions

Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**

Cyclic Dynamical Systems

Stability of Cyclic Dynamical Systems (75-WA/Aut-13) (A) **Ap 94**

Cyclic Hardening

A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**

Cycloidal Mechanisms

Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**

Cylinders

Analysis of Finite Cylinders Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**

Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**

Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**

Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**

Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**

Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**

The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-Lubs-6) (A) **S 96**. Part II: Experimental (76-LubS-10) (A) **S 97**

A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**

Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**

Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**

Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) (A) **S 98**

Cylindrical Fluid Containers

Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**

Cylindrical Inducers

Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**

Cylindrical Nozzles

Nozzle Design for ASME Code Requirements (76-PVP-20) (A) **D 100**

Cylindrical Rods

Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**

Cylindrical Roller Bearings

An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**

A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**

Cylindrical Shells

A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**

Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**

Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**

Cylindrical Surfaces

Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**

Cylindrical Tanks

Buckling of Thin-Walled Cylindrical Tanks (76-PVP-19) (A) **D 99**

Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**

Czayka, M. A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**

Cziglenyi, L. Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**

D

Daikoku, T. Low-Alloy High-Strength Steel for Boiler

Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**

Dalcher, A. W. Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**

Dale, J. D. Toward Laser Engines (C) **D 46**

Dallas, D. B. *(editor)* Tool and Manufacturing Engineering Handbook: A Reference Work for Manufacturing Engineers (CB) **N 104**

Dalton, C. Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule (75-WA/Mgt-1) (A) **Ap 96**; A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula (75-Pet-29) (A) **Ja 116**

Dalton, M. Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule (75-WA/Mgt-1) (A) **Ap 96**

Dalzell, R. C. Othmer Provokes Recollections (C) **N 43**

Dampers

Characteristics of the Dynamic Vibration Absorber with Elastically Supported Damper (76-DE-43) (A) **S 93**

Damping

Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **JI 96**

Das Gupta, S. On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**; Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**

Data-Based Computer System

Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**

Data Collection

Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**

Low-Cost Data Collection System (BTR) **My 52**

Data Management

Communications and Data Management (CB) **D 107**

Daub, E.E. *(author)* Comprehending Technical Japanese (CB) **F 88**

Davidson, J. K. Minimizing Assembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **JI 93**

Davis, E. W. *(editor)* Project Management: Techniques, Applications and Managerial Issues (CB) **Ag 103**

Davis, L. B. Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**

Davis, L. R. The Characteristics of Thermal Plumes (75-WA/HT-64) (A) **My 103**; Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Davis, R. C. Unification Vacuum (C) **Ja 35**

Davis, S. H. CO_2 and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**

Davis, T. L. The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**

Davis, W. R. Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**

Dean, P. D. On the "In-Situ" Control of Acoustic Liner Attenuation (76-GT-61) (A) **JI 94**

Deane, T. N. Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**

Decision-Making Processes

How Do We Decide? **Ag 34**

How to Make A Decision **F 65**

DeCorso, S. M. Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **JI 86**

Decuyper, M. Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **JI 90**

Deeds, R. S. Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**

Deep Diving Conditions

Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**

Deep Well Pumps

Self-Pressurizing Seals Keep Submersible Motors Dry **F 20**

de Gee, A. W. J. On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**

De Lancey, W. H. Efficiency of Discrete Gear Transmissions as a Means of Starting and Accelerating Automotive Vehicles (76-DE-40) (A) **S 92**

de Mare, E. *(author)* Bridges of Britain (CB) **Ja 126**

De Morais, G. A. Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE-9) (A) **Ag 100**

de Winter, F. On ASME Stands (C) **S 48**

Defect Detection

Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**

Defects

Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**

Deflections

Fracture in Straight Pipes Under Large Deflection Conditions—Part I: Structural Deformations (76-PVP-9) (A) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**

Deformation

Deformation and Fracture Mechanics of Engineering Materials (CB) **D 107**

Deformation Analysis

A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**

Deformation Processing

The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) (A) **Mr 104**

Delale, F. Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**

Delany, J. T. XFV-12A Propulsion System Development (76-GT-125) (A) **Ag 92**

DeLuca, L. B. A Unique Cotton Silver Drafting System (76-Tex-4) (A) **N 95**

De-Meulemeester, E. COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**

Demiray, H. Stresses in Ventricular Wall (76-APM-31) (A) **O 104**

Demister System

Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **JI 93**

Demuren, H. O. Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **JI 98**

Denby, L. Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**

Dent, J. R. Advancements and Application of Programmable Analog Control Technology (76-GT-122) (A) **Ag 92**

Dental Therapy

Fewer Cavities, Thanks to Laser (BTR) **N 53**

Deployable Solar Arrays

Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**

Derivative Synthesis

Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**

Derner, W. J. A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**

Desai, P. Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Desalination

Desalination—circa 1970 **Je 20**

Design

DTC Vs. DTCR Vs. DFSO = Conflict (?) **Mr 34**

Value Analysis in Design and Construction (CB) **O 106**

Design Aids

Using the Contour Line Method of Representing Failure Criteria as a Design Aid (76-DET-75) (A) **D 94**

Design Analysis

Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**

Design Analysis of A Snap-Action Mechanism (76-DE-35) (A) **S 91**

Design Awards

ME Cover Honored by the Society of Publication Designers **Ag 81**

Design Criteria

Design Criteria (C) **Je 47**

Design Development

Mr. Designer, Are You With It? (76-DET-82) (A) **D 94**

Design Engineering

An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions (75-WA/DE-11) (A) **F 87**

An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**

Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) (A) **Mr 106**

Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE-9) (A) **Ag 100**

Automated Dynamic Load Simulator—A Useful Tool in Evaluating Cranking System Design (76-DE-13) (A) **Ag 100**

An Automatic Balancer Design for a Vertical-Axis Clothes Washing Machine (76-DE-24) (A) **S 91**

The Automatic Hydraulic Ram: Its Theory and Design (76-DE-17) (A) **S 90**

On the Behavior of Statistical Models Used for Design (75-WA/DE-28) (A) **Mr 107**

Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) (A) **Mr 105**

The Building Block Method of Cam Design (76-DE-36) (A) **S 92**

Characteristics of the Dynamic Vibration Absorber with Elastically Supported Damper (76-DE-43) (A) **S 93**

Closed Form Design Solutions for Box Type Heat Exchangers (75-WA/DE-15) (A) **Mr 106**

Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) (A) **Mr 106**

A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**

Criteria for Evaluating Bolt Head Design (76-DE-30) (A) **S 91**

Design Analysis of A Snap-Action Mechanism (76-DE-35) (A) **S 91**

Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) (A) **Mr 104**

Design—The Critical Stage (76-DE-6) (A) **Ag 100**

Design of a Fiber Optic Pressure Transducer (75-WA/DE-8) (A) **Mr 105**

A Design Program Including Theory and Practice (76-DE-31) (A) **S 91**

The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**

Determining of Pivot Locus for Pivoted Motor Belt Drives (75-WA/DE-29) (A) **Mr 107**

Development of a Jacketed Pressure Vessel: A Design Case Problem (76-DE-33) (A) **S 91**

Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) (A) **Mr 104**

The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) (A) **Mr 106**

Eccentric Limit Load on Fasteners (75-WA/DE-6) (A) **Mr 105**

On Eccentrically Loaded Fasteners (75-WA/DE-9) (A) **Mr 104**

On the Effect of Variation of Friction with Belt Speed (75-WA/DE-27) (A) **Mr 106**

Efficiency of Discrete Gear Transmissions as a Means of Starting and Accelerating Automotive Vehicles (76-DE-40) (A) **S 92**

Elimination of the Branch Problem in Graphical Burmester Mechanism for Four Finitely Separated Positions (75-WA/DE-23) (A) **Mr 106**

Engineering Management—A Challenge in Leadership (76-DE-11) (A) **Ag 100**

An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**

Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**

Extension Springs—Stress at the Body Radius (76-DE-18) (A) **Ag 101**

Failure Analysis of a Redundant Reeving Hoist (76-DE-21) (A) **S 90**

Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**

Flow Measuring Devices (76-DE-23) (A) **S 90**

Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**

High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**

Improving the Design Engineering Curriculum **Ja 14**

Inception of Cavitation from a Solid Surface (75-WA/DE-13) (A) **Mr 104**

Incipient Failure Detection in CH-47 Helicopter Transmissions (75-WA/DE-16) (A) **Mr 105**

Influence of Shaft Runout on Vibration Analysis (76-DE-38) (A) **S 92**

Information Sources for Plastics (76-DE-16) (A) **S 90**

Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**

Instrument Contact Spring Design Considerations (76-DE-44) (A) **S 93**

Interconnections for Microelectronics (76-DE-14) (A) **Ag 101**

Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**

Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) (A) **S 92**

Negev Development—An Integrated Design Project for Mechanical Engineering Students (76-DE-7) (A) **Ag 100**

New Directions for Adhesive Usage (76-DE-15) (A) **S 90**

A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**

On Optimal Bolt Preload (75-WA/DE-14) (A) **Mr 105**

An Orderly Approach to Design Decisions (76-DE-12) (A) **Ag 100**

Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**

The Precision Manufacturing of Cams (76-DE-37) (A) **S 92**

Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**

On Reciprocating Toroidal Seals (75-WA/DE-20) (A) **Mr 106**

The Role of Fracture Mechanics in Fatigue Design (76-DE-5) (A) **Ag 100**

The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) (A) **F 87**

A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) (A) **Mr 107**

A Singularity Approach to Circular Plates (76-DE-28) (A) **S 91**

The Snotruk Transmission—A Case Problem (76-DE-32) (A) **S 91**

Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) (A) **F 87**

Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**

Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**

Teaching Engineering Design in a Developing Industrial Community—The Hong Kong Situation (76-DE-20) (A) **Ag 101**

Torquewhirl—A Theory to Explain Nonsynchronous Whirling Failures of Rotors with High Load Torque (76-DE-29) (A) **S 91**

Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) (A) **Ag 100**

Uses of Statistics in Product Testing and Evaluation (76-DE-25) (A) **S 91**

V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**

A Vibration Isolation Strategy for Small Engines with Unbalance at One-Third Operating Speed: The Wankel (76-DE-27) (A) **S 91**

Weighing the Risk of Patent Infringement (76-DE-1) (A) **Ag 99**

Design Engineering Technical Conference

Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 94**

On the Algebra of Four-Bar Linkage Centrode Curves (76-DET-13) (A) **N 98**

Analysis and Design of Disposable Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**

Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**

Analytical Design of Cam-Type Angular-Motion Compensators (76-DET-22) (A) **N 99**

Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) (A) **N 98**

Application of a Finite Element Computer Program for Studying Failures and Affecting Design Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**

Application of Finite Element Technique to the Design Technology Transfer (76-DET-74) (A) **D 94**

Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**

Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**

An Approximate Method for the Dynamic Analysis of Elastic Linkages (76-DET-49) (A) **N 102**

Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**

Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**

A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **D 94**

Brief Survey of Spring Design Nomographs (76-DET-77) (A) **D 94**

On Cage-Plane Motion (76-DET-2) (A) **N 97**

Closing the Gap Between Research and Practice (76-DET-86) (A) **D 95**

Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**

Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**

On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**

Current Advances in Surface Characterization (75-DET-88) (A) **D 95**

A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**

A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) (A) **N 101**

Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**

Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**

On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**

Design of Four-Bar Function Generators With Mini-Max Transmission Angle (76-DET-8) (A) **N 97**

Mr. Designer, Are You With It? (76-DET-82) (A) **D 94**

A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**

Displacement Analysis of Spatial Seven-Link 5R-2P Mechanisms (76-DET-39) (A) **N 100**

Dynamic Characteristics of Contact-Separation in Mechanisms (76-DET-14) (A) **N 98**

Dynamic Response of a Cam-Actuated Mechanism With Pneumatic Coupling (76-DET-35) (A) **N 100**

Dynamics of High-Speed Cam Mechanisms with Damped Flexible Followers Driven by Flexible Camshafts (76-DET-63) (A) **D 92**

Effective Role of Trade Magazines in Design Technology Transfer (76-DET-106) (A) **D 97**

Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**

On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**

Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**

Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**

Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**

An Experimental Study on Variations of Rotational Speed and Flapping Vibrations in Belt Drives (76-DET-102) (A) **D 97**

Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**

On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**

Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**

Graphical Solution of the Branch and Order Problems of Linkage Synthesis for Multiply Separated Positions (76-DET-16) (A) **N 98**

Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**

The Heat Pipe—A Survey (76-DET-84) (A) **D 95**

Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1 Theory (76-DET-24) (A) **N 99**; Part 2 Applications (76-DET-25) (A) **N 99**

Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**

Instantaneous Kinematics of a Special Two-Parameter Motion (76-DET-4) (A) **N 97**

KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**

The Manipulator Interference Problem (76-DET-68) (A) **D 93**

Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Algebraic Loci and Couplings (76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**

Mechanical Design and the Programmable Calculator (76-DET-91) (A) **D 96**

A Mechanical Device for Detecting and Functioning in a Planetary-Type Acceleration Field (76-DET-72) (A) **D 93**

Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**

Mechanism Case Studies III (76-DET-59) (A) **D 92**

Mechanism Design Using Animation (76-DET-54) (A) **N 102**

Mechanisms as Components of Dynamic Systems: A Bond Graph Approach (76-DET-21) (A) **N 98**

On a Method for the Study of Constant Velocity Ball Joints (76-DET-66) (A) **D 93**

Mixed Exact-Approximate Planar Mechanism Position Synthesis (76-DET-29) (A) **N 99**

Mohr's Circle and Its Applications to Engineering Design (76-DET-99) (A) **D 96**

Momentum Balancing of Four-Bar Linkages (76-DET-28) (A) **N 99**

Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**

The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A) **N 97**

The Myths of Productivity (76-DET-103) (A) **D 97**

A New Constant Velocity Coupling (76-DET-33) (A) **N 100**

A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**

A Note on the Transfer of Technology Between Universities and the Fluid Power Industry in the U.K. (76-DET-85) (A) **D 95**

A Novel Design of Turbine Blading of Extreme Length (76-DET-93) (A) **D 96**

A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**

Optimizing Designs of Machines and Mechanisms by Functional Approach (76-DET-15) (A) **N 98**

Optimum Design of a Complex Planar Mechanism (76-DET-47) (A) **N 101**

A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**

Power in an Accelerating Mechanism (76-DET-60) (A) **D 92**

Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**

Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) (A) **N 101**

The Role of Fracture Mechanics in Design Technology (76-DET-58) (A) **N 103**

The Role of Modeling and Simulation in the Design and Appraisal of Fluid Power Systems (76-DET-92) (A) **D 96**

Role of the Programmable Pocket Calculator in Machine Design with Helical Spring Examples (76-DET-101) (A) **D 96**

Rotating Shaft Seals: Part 2—The Magnetic Fluid Seal Considered in the Context of Seven Previous Basic Types (76-DET-97) (A) **D 96**

Shape and Frequency Composition of Pulses From an Impact Pair (76-DET-36) (A) **N 100**

A Simplified Procedure for Designing Supersonic Air Ejectors (76-DET-98) (A) **D 96**

A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

State of Art at Research Level in the Design of Wildhaber-Movikov Circular Arc Gears (76-DET-78) (A) **D 94**

State of the Art Review of Sliding Vane Machinery (76-DET-90) (A) **D 96**

Static and Dynamic Seals: Part I—Static Seals (76-DET-83) (A) **D 95**

Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**

Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**

Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**

Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and

Pair Geometry Constraints (76-DET-46) (A) **N 102**
Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**
Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**
Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**
Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**
Thermal Stress Analysis of Thin, Spherical Shells (76-DET-104) (A) **D 97**
The Transfer of Intermediate Technology: A Challenge to the Multinational Company (76-DET-81) (A) **D 94**
A Two-Path Variable-Ratio Transmission With an Extended Range of Ratios (76-DET-37) (A) **N 100**
The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**
Using the Contour Line Method of Representing Failure Criteria as a Design Aid (76-DET-75) (A) **D 94**
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) (A) **N 101**
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**

Design Modifications
Application of a Finite Element Computer Program for Studying Failures and Affecting Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**

Design Optimization
Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**

Design Philosophy
Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) (A) **D 104**

Design Programs
A Design Program Including Theory and Practice (76-DE-31) (A) **S 91**

Design Technology Transfer
Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 94**
Application of Finite Element Technique to the Design Technology Transfer (76-DET-74) (A) **D 94**
Effective Role of Trade Magazines in Design Technology Transfer (76-DET-106) (A) **D 97**

Deslate, W. D. The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**

Determinants
A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) (A) **S 99**

Detonation Waves
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**

Deutsch, S. Planning for Life Sciences Research in Space (76-ENAs-52) (A) **N 92**

DeVries, M. F. An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**

Dhande, S. G. Analytical Design of Cam-Type Angular-Motion Compensators (76-DET-22) (A) **N 99**

Dhir, V. Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**

Diaphragms
The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) (A) **F 87**

Dibellus, N. R. A Correlation of Nitrogen Oxides Emissions with Gas Turbine Operating Parameters (76-GT-14) (A) **Jl 88**

Dickerson, J. R. Stability of Cyclic Dynamical Systems (75-WA/Aut-13) (A) **Ap 94**

Dickinson, S. M. On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**

Dickson, J. Problems Associated with Cold Weather Operation of Gas Turbines (76-GT-129) (A) **Ag 93**

Dickson, J. L., III *(editor)* Advances in Biomedical Engineering (CB) **Ag 104**

DiCristina, V. A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**

Diehl, L. A. Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Jl 87**

Diehl, R. C. Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**

Diesburg, D. E. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**; Prediction of Toughness Behavior Using Precracked Charpy Specimens (75-Pet-25) (A) **Ja 115**

Diesel Engines
Application of Cross-Correlation Technique to the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 84**

Diesel Exhaust
Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**

Diesel Fuels
Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**

Diesel and Gas Engine Power
Application of Cross-Correlation Technique to the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 83**
Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**
Design and Development of America's Most Powerful Diesel Engine—The 20 Cylinder RV (76-DGP-4) (A) **Ag 96**
Design and Development of a Medium Speed Integral Angle Compressor Engine (76-DGP-8) (A) **Ag 97**
Determination of the Dynamic Structural Response Characteristics of a Large Diesel Engine by Means of the Low Level Impedance Method (76-DGP-9) (A) **Ag 97**
Developing a New Series of Stationary Vee Gas Engines (76-DGP-14) (A) **Ag 98**
DYNA—A New Family of Controls: Development of a New Electronic Governor System for Internal Combustion Engines (76-DGP-7) (A) **Ag 96**
Emissions from an Ammonia-Fueled Spark Ignition Engine (75-WA/DGP-2) (A) **F 84**
Fuel Savings by Deactivating 8 Power Cylinders on a V-16 Engine (76-DGP-10) (A) **Ag 98**
Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**
An Investigation on the Diffusion of Momentum and Mass of Fuel in a Diesel Fuel Spray (76-DGP-1) (A) **Ag 96**
Nonlinear Expanders for Diesel-Cycle Application—Part I: An Introduction to Geometric Concepts and Analysis (76-DGP-15) (A) **Ag 98**; Part II: Temporal Effects (76-DGP-16) (A) **Ag 99**; Part III: Design Considerations (76-DGP-17) (A) **Ag 99**
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**
Proven Operational Performance of Low-Speed Two-Stroke Crosshead Engines in Marine Service (76-DGP-11) (A) **Ag 98**
The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**
Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**
The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**
A Versatile Two-Cycle Diesel Engine—The EMD Model 645 Series (76-DGP-5) (A) **Ag 97**

Diesel Locomotives
Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**

Diesel Power
Diesel Power Ratings Increase (IF) **D 65**

Diesels
Diesel Expansion Underway (BTR) **S 55**

Dietary Fiber
Dietary Fiber: Facts and Fantasy (BTR) **Ag 46**

Dietrich, D. E. Experimental-Analytical Correlation for the Pressure Analysis of a Loop Isolation Valve Body (76-PVP-69) (A) **D 105**

Diffraction
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**

Diffuse Substrates
The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**

Diffuser Inlet Conditions
Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **Jl 95**

Diffusers
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**

Diffusion
An Investigation on the Diffusion of Momentum and Mass of Fuel in a Diesel Fuel Spray (76-DGP-1) (A) **Ag 96**

Diffusion-Limited Models
A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**

Digital Computers
A Computer Method for Calculating Dynamic Responses of Nonlinear Flexible Rail Vehicles (76-RT-5) (A) **S 94**
Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**
Computer Review (CB) **Ag 104**
Principles of Digital Computer Design (CB) **Ag 104**

Digital Control
Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**

Digital Recorders
Stored Machine "Signatures" (BTR) **O 58**

Dimensional Variations
Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate (75-WA/Fics-8) (A) **Je 115**

Dippery, R. E., Jr. Still More on Nader (C) **Je 48**

Direct Contact Boilers
Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**
Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**

Direct Contact Flow
Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**

Direct Contact Heat Exchangers
Design of Particulate Direct Contact Heat Exchanger: Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**

Direct Contact Heaters
On Calculation of Heat and Mass Transfer in Jet Type Direct Contact Heaters (76-HT-21) (A) **O 100**

Direct-Reversing Unit
Direct-Reversing Marine Gas Turbine (BTR) **Ja 43**

Discharge Dispersion Patterns
Simulation and Field Observation of Heated Discharge Dispersion Patterns (75-WA/HT-61) (A) **My 103**

Discrete Holes
Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**

Discrete Jets
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes: I-Laminar Flow (75-WA/HT-109) (A) **Je 117**

Disk Cams
Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**

Disks
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**

Dispersed Flow
Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**

Dispersion Models
A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**

Displacement Analysis
Displacement Analysis of Spatial Seven-Link 5R-2P Mechanisms (76-DET-39) (A) **N 100**

Disposable Energy Absorbers
Analysis and Design of Disposable Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**

Disseminators
Fluid Classifier and Disseminator (BTR) **S 57**

Dissimilar Materials
Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**

Distance Maximization
Maximizing Distance of the Golf Drive: An Optimal Control Study (75-WA/Aut-12) (A) **Ap 94**
Distillate Oil
Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**
Divergent Flow
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**
Divergent Narrow Gaps
Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**
Divestiture
The Divestiture Debate (WW) **S 74**
Diving Simulators
Deep-Sea Research Lab (IF) **N 56**
Dobson, P. D. Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**
Doctoral Degrees
Number of Doctoral Degrees May Drop in 1985 (EN) **Jl 65**
Dodd, V. R. Steam Turbine Diaphragm Failure (75-Pet-49) (A) **Ja 118**
Dodge, C. Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**
Dodge, P. R. A Non-Orthogonal Numerical Method for Solving Transonic Cascade Flows (76-GT-63) (A) **Jl 94**
Dolan, D. F. Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**
Dolbec, A. C. Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**
Dolodarenko, A. G. Effects of Built-Up Edge in Drilling (75-WA/Prod-17) (A) **Mr 102**
Domoto, G. A. Free Convection Along a Non-Isothermal Vertical Flat Plate (75-WA/HT-15) (A) **Ap 100**
Donaldson, A. B. Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**
Doner, M. An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) (A) **F 82**
Dooher, J. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95**; **N 36**
Doolan, P. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**
Dorman, F. Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**
Doroschuk, V. E. Investigations Into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**
Doscher, S. L. Public Sector Technology Transfer—A Congressional Perspective (75-WA/Aero-1) (A) **My 98**
Douglas, W. J. M. Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**
Douty, R. A. Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Dowdell, R. D. Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**
Downing, N. L. Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**
Dowson, D. Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 1—Theoretical Formulation (75-Lub-11) (A) **Ja 119**; Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**; The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**; Part II: Experimental (76-LubS-10) (A) **S 97**; Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**
Doyle, G. R., Jr. Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**
Doyle, T. J. Superconductive Propulsion Motor Development at NSRDC (75-WA/OcE-8) (A) **Ap 91**
Drag Braking
Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**
Drain Pumps
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) (A) **F 85**
Drake, G. L. Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**
Dransfield, D. C. Detailed Flow Measurements in a Four Stage Axial Compressor (76-GT-46) (A) **Jl 92**
Dravinski, M. Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**
Dredged Material Disposal
Disposal of Dredged Material—A Key Environmental Consideration in the Construction of Major Nearshore and Coastal Marine Facilities (75-WA/Pet-7) (A) **My 95**
Dreshfield, R. L. Heat Treating of a Lamellar Eutectic Alloy ($\gamma/\gamma' + \delta$) (76-GT-103) (A) **Ag 90**
Driels, M. Predicting Optimum Two-Stage Valve Closure (75-WA/FE-2) (A) **Je 108**
Drift Eliminators
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**
Drilling
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) (A) **Mr 102**
Drilling Wells
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**
Driving Motors
Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**
Dropping Ball Viscometer
A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**
Dryout Heat Fluxes
Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**
Drzewiecki, T. M. Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
D'Souza, A. F. On the Design of Suboptimal Regulators for Linear Distributed Systems (75-WA/Aut-9) (A) **Ap 94**; Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) (A) **Ap 105**
D'Souza, N. Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method (75-WA/HT-81) (A) **My 105**
Dubner, R. M. Steam Turbine Diaphragm Failure (75-Pet-49) (A) **Ja 118**
Dubowsky, S. Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**; Mechanisms as Components of Dynamic Systems: A Bond Graph Approach (76-DET-21) (A) **N 98**
Duckwitz, N. R. Cycle Analysis of Air-Storage Power Plants (76-GT-41) (A) **Jl 91**
Duct Dynamic Interactions
Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Duct Fire
Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**
Ductile Beams
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**
Ductile Flow
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**
Ducts
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**
Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**
The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**
Dudek, J. A. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**
Duffie, J. A. Computer Modeling of Heat Pumps and the Simulation of a Solar-Heat Pump System (75-WA/Sol-3) (A) **Mr 93**
Duffy, J. Displacement Analysis of Spatial Seven-Link 5R-2P Mechanisms (76-DET-39) (A) **N 100**; Skeletal Partially Activated Human Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**
Duignan-Woods, E. Getting the Message Through (C) **Ja 37**
Dukkipati, R. V. On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**; Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**; Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**
Dukler, A. E. A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
duPlessis, M. P. An All-Pneumatic Artificial Ventricle Driving System (75-WA/Flcs-2) (A) **Je 114**
Durability
Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**
Duraiswamy, K. The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**
Durocher, L. L. Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**; A Singularity Approach to Circular Plates (76-DE-28) (A) **S 91**
Dusatko, G. The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**
Dust
Fugitive Dust Gets Out of Hand (NB) **Ap 71**
Dust Concentrations
Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**
Dwyer, H. A. Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**
Dybbs, A. Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**
Dyeing
Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**
Dyer, D. F. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**
Dynamic Analysis
A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**
Dynamic Bending
The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**
Dynamic Fracture
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**
Dynamic Load Simulator
Automated Dynamic Load Simulator—A Useful Tool in Evaluating Cranking System Design (76-DE-13) (A) **Ag 100**
Dynamic Pressure Exchangers
Dynamic Pressure Exchanger Performance Estimates (75-Pwr-1) (A) **Ja 110**
Dynamic Seals
Static and Dynamic Seals: Part I—Static Seals (76-DET-83) (A) **D 95**
Dynamic Structural Response
Determination of the Dynamic Structural Response Characteristics of a Large Diesel Engine by Means of the Low Level Impedance Method (76-DGP-9) (A) **Ag 97**
Dynamic Systems
Behavior of Dynamic Systems Governed by a Simple Nonlinear Difference Equation (75-WA/APM-21) (A) **Je 121**
Dynamic Transfer Function
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**
Dynamic Vibration Absorbers
Characteristics of the Dynamic Vibration Absorber with Elastically Supported Damper (76-DE-43) (A) **S 93**
Dynamic Viscosity
Dynamic Viscosity Data **Je 101**

E

Earl, D. E. *(author)* Forest Energy and Economic Development (CB) **Ag 103**
Earles, S. W. E. A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**
Earthquake Predictions
Satellite Aid to 'Quake Prediction (BTR) **My 54**
Eberle, W. R. Fluidically Controlled Active Suspension Systems for High Speed Ground Vehicles (75-WA/Flcs-6) (A) **Je 115**

EBR-II Maintenance Experience
Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**
Eccentric Limit Loads
Eccentric Limit Load on Fasteners (75-WA/DE-6) (A) **Mr 105**
Eck, B. J. Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**
Eckardt, D. Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) (A) **Ag 95**
Eckert, W. L. Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**
Ecklin, J. W. The Wheel Story (C) **Jl 40**
Economic Atlas
Oxford Regional Economic Atlas: The United States and Canada (CB) **D 106**
Economic Growth
Closing the Gap Between Research and Practice (76-DET-86) (A) **D 95**
Economic Growth Trajectories
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**
Economic Incentives
An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**
Economic Models
Social Implications of Technology: An Economic Model Based on Efficiency (75-WA/Aut-2) (A) **Ap 93**
Economic Outlook
Better Times in '76 (NR) **F 54**
Economic Planning
Doomsday Theorists Challenged (BTR) **S 51**
Edelman, B. Nader and Tribus Articles Related (C) **Je 49**; Preparing for Global Crisis (C) **N 43**
Edenburn, M. W. A Solar Heating System for a Northern New Mexico Adobe House (75-WA/Sol-11) (A) **Mr 94**
Edge Constraints
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) (A) **S 98**
Edge-Cracked Plates
Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**
Edgerton, R. H. Still More on Nader (C) **Je 48**
Editorials
ASME Congressional Fellow Program **Ap 21**
ASME Issues Energy Policy Statement **Ja 3**
ASME's Economic Future Is In Your Hands **F 13**
The Bicentennial — A Look Back **My 3**
Budget Deficits, Surpluses, and the Five-Year Plan **N 13**
Controlling Member Dues **Ag 17**
Engineering: A World View **D 15**
Government Responds to ASME Energy Statement **S 17**
Metric Conversion Act: Finally A Law **F 3**
A New Look at Professional Development **Mr 17**
RAC—Getting to the Grass Roots of ASME **My 15**
R&D Funding: An Upward Trend **Mr 3**
Speak Out for Technology **Jl 15**
The Spouses Speak Up **O 17**
What Does An ASME President Do? **Je 17**
The World Measurement Language **Ja 9**
Edmondson, A. J. Failure Analysis of a Redundant Reeving Hoist (76-DE-21) (A) **S 90**; Wood Planar Noise (75-WA/PID-6) (A) **My 97**
Education
Continuing Education Unit—What Is It? (EN) **Ja 64**
Education Means Quality (CT) **N 72**
Edwards, D. K. Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**; Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**; Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Edwards, J. C. Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**
Efficient Technologies
The Effect of Efficiency (ES) **Ag 18**
Egerton, D. An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**
Eggen, A. C. W. Gasification of Solid Waste in Fixed Beds **Jl 24**
Ehlert, J. Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**
Eichhorn, R. Elections to Fellow Grade **D 90**; Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**
Eide, S. A. Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**
Eidelberg, B. E. Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**
Eimermacher, J. P. Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**
Eisenberg, M. A. A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**
Eisley, J. *(editor)* Engineering Education and Lifetime of Learning (CB) **Ag 102**
Eiss, N. S., Jr. Current Advances in Surface Characterization (76-DET-88) (A) **D 95**
Eiswirth, E. A. An Experimental Investigation of Ogive Film Cooling (76-ENAs-39)(A) **O97**
Elastic Beams
Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **Jl 99**
Elastic Connecting Rods
Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) (A) **N 98**
Elastic Half Planes
An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**
Elastic Half Space
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**
Elastic Instability
Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**
Elastic Linkages
An Approximate Method for the Dynamic Analysis of Elastic Linkages (76-DET-49) (A) **N 102**
Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**
Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**
Elastic Medium
The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**
Elastic Modulus
Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**
Elastic Oscillations
On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**
Elastic Plate Cylinders
Three-Dimensional Analysis of an Elastic Plate-Cylinder Intersection by the Boundary-Point-Least-Squares Technique (76-PVP-34) (A) **D 101**
Elastic-Plastic Analysis
Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**
Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**
Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**
Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**
Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**
A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**
Elastic Rectangles
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**
Elastic Shear Waves
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**
Elastic Spheres
Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) (A) **S 99**
Elastic Systems
Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**
Elastically Supported Dampers
Characteristics of the Dynamic Vibration Absorber with Elastically Supported Damper (76-DE-43) (A) **S 93**
Elastic-Plastic Materials
Reflection and Transmission of Elastic-Plastic Spherical Waves at a Spherical Interface (75-WA/APM-23) (A) **Je 121**
Elastic-Plastic Response
Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**
Elastodynamic Analysis
Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**
Elastodynamic Motion
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) (A) **N 101**
Elastohydrodynamic Contacts
On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) (A) **Ja 120**
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**
Infrared Emission Spectra of Elastohydrodynamic Contacts (75-Lub-10) (A) **Ja 119**
Prediction of Traction in Sliding EHD Contacts (75-Lub-7) (A) **Ja 119**
Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**
Elastohydrodynamic Lubrication
Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**
Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**
Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**
Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**
Elastohydrodynamic Squeeze Films
Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**
Elastohydrodynamic Traction
A Simplified Model for the Elastohydrodynamic Traction Between Rollers (75-Lub-6) (A) **Ja 118**
Elastohydrodynamics
An Investigation in the Field of Elastohydrodynamics (76-LubS-4) (A) **S 96**
Elastokinematics
On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**
Elastomeric Seals
Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**
Elasto-Plastic Analysis
Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**
Elbow Pipe Assemblies
Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**
Elchuri, V. Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**
Electric Cars
Electric Car with 240-km Range (BTR) **N 46**
"Electrics" Promise Vast Oil Savings (BTR) **D 51**
The Other Side of the Outlet (C) **Ja 36**
We Want 'em Electric (ES) **N 14**
Electric Currents
Magnetoelastic Buckling and Vibration of a Rod Carrying Electric Current (75-WA/APM-28) (A) **Jl 99**
Electric Fields
Assess Electric Field Effects on Animals (BTR) **D 53**
Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Electric Motors
Seal Development for Large, Submersible Electric Motors

(75-Lub-17) (A) **Ja 119**

Electric Power
U.S. Coal and the Electric Power Industry (CB) **Je 123**

Electric Power Costs
Energy Cycles: Their Cost Interrelationship for Power Generation **Je 22**

Electric Power Generation
An Advanced Coal Gasification System for Electric Power Generation (75-Pwr-6) (A) **Ja 111**
A Forecast of Power Developments, 1975–2000 (75-Pwr-5) (A) **Ja 110**
Fuel Conservation and the Breeder Reactor **Mr 28**
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) (A) **Mr 92**

Electric Power Research Institute
EPRI + ERDA = Energy R&D (ES) **My 17**
Study New Power Plant (BTR) **F 43**

Electric Utilities
$110 Billion in 5 Years (ES) **D 16**
Start with Nature (ES) **D 16**

Electric Utility Plants
Wind-Powered Electric Utility Plants (75-WA/Pet-1) (A) **My 95**

Electric Utility Rates
Electric Rates in Today's Economy (75-Tex-9) (A) **Ja 125**

Electrical Activity
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Electrical Circuits
A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

Electrical Energy
The Dynamics of Electrical Energy Supply and Demand: An Economic Analysis (CB) **Je 123**

Electrical Industry Products
Power Products Go Down and Up (ES) **Ja 11**

Electrical Properties
Critical Surveys of Data Sources: Electrical and Magnetic Properties of Metals (CB) **D 106**

Electrical Resistance
On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**

Electrical Units
Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**

Electrical Wires
Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**

Electricity
Electric Statistics (ES) **N 15**
An Electric Trend (ES) **O 19**
Electrical Output Expands (IF) **Mr 59**
Electricity Is Going Underground (ES) **Je 18**
For More Efficient and Cheaper Electricity (ES) **F 15**
Gas vs. Electricity (ES) **Ap 23**
Less Electricity Needed (ES) **Ag 19**

Electricity Growth
Will We Ever Have An All-Electricity Economy? (ES) **Mr 19**

Electricity Pricing System
High Demand, High Price (ES) **My 17**

Electricity Use
Efficient Electricity Use: A Practical Handbook for an Energy Constrained World (CB) **N 105**

Electrochemical Depolarized Carbon Dioxide
Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**

Electrochemical Machining
Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) (A) **S 99**
Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) (A) **Ap 104**

Electrode Manipulation
The Effect of Electrode Manipulation on Deposit Notch Toughness (75-WA/PVP-18) (A) **Ap 98**

Electrode Materials
New MHD Electrode Materials (BTR) **Jl 46**

Electrolysis
Electrolytic Urine Pretreatment (76-ENAs-19) (A) **O 95**

Electromechanical Dynamics
Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**

Electron Beams
Harnessing E-Beams (BTR) **Je 55**

Electronic Engine Control
Electronic Engine Control: A Draper-Li Breakthrough Ripens in 25 Years **S 35**

Electronic Gage System
Electronic Water Level Gage (IF) **F 53**

Electronic Governor Systems
DYNA—A New Family of Controls: Development of a New Electronic Governor System for Internal Combustion Engines (76-DGP-7) (A) **Ag 96**

Electronic Measuring Systems
Programmable Measuring System (BTR) **Jl 49**

Electronic Switching System
Laser Beam Welding (IF) **D 64**

Electronics
Cooling Methods for Aircraft Electronics Equipment (76-ENAs-51) (A) **N 92**

Electrophotography
Electrophotography (CB) **My 109**

Electroplated Thermocouples
Surface Temperature Measurement Using Electroplated Thermocouples (75-WA/TM-2) (A) **My 96**

Elevated Guideways
The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**

Elevated Temperature Fatigue
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) (A) **F 82**

Elevated Temperatures
Autoignition Characteristics of Hydrocarbon Fuels at Elevated Temperatures and Pressures (76-GT-3) (A) **Jl 87**
Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**

Ellipsoidal Asperities
Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**

Ellipsoidal Heads
Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**

Ellipsoidal Inhomogeneities
Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**

Elliptic Holes
Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Ellipticity Parameter Results
Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**

Ellis, J. R. An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**

Elmaraghy, H. A. A Simulation Method of Establishing Fatigue Life Distribution (75-WA DE-25) (A) **Mr 107**

Elmendorf, R. G. Returning to Entropy (C) **Mr 42**; On Sagan, Speculation, Creation (C) **N 43**

Elrod, H. G., Jr. Free Convection Along a Non-Isothermal Vertical Flat Plat (75-WA/HT-15) (A) **Ap 100**

El-Shaarawi, M. A. I. Quasi-Three-Dimensional Numerical Solution of Flow in Turbomachines (76-FE-23) (A) **Ag 96**

Elston, L. W. Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Emery, A. F. Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**; Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**; Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**

Employment Prospects
Job Outlook for 1976: Demand High for Top ME's (EN) **F 58**

Emergency Core Cooling
Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**

Emergency Vehicles
A Siren's Sound is Not Enough (BTR) **Ag 52**

Emergy, A. F. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**

Emerson, P. D. Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**; Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

Emery, A. F. An Energy Method Determination of Large Cable Dynamics (76-APM-20) (A) **S 100**; Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**; The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**; Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**

Emission Spectra
Infrared Emission Spectra of Elastohydrodynamic Contacts (75-Lub-10) (A) **Ja 119**

Emissions
Emissions from an Ammonia-Fueled Spark Ignition Engine (75-WA/DGP-2) (A) **F 84**
Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**

Emissions Characteristics
Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**

Emissions Research
Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**

Employment Prospects
Job Offers Pick Up—But Questions Remain (EN) **My 68**

Employment Termination
The End of the Game (PS) **O 79**

Emulsions
Emulsions as Fuels (75-WA/Fu-3) (A) **My 95**; **N 36**

End Loading
The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) (A) **S 98**

End-Wall Boundary Layers
Flow Prediction in Axial Flow Compressors Including End-Wall Boundary Layers (76-GT-72) (A) **Jl 95**

End Walls
A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **Jl 95**
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**

Energetics
A Cesium Vapor Cycle for an Advanced LMFBR (75-WA/Ener-5) (A) **Mr 96**
Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine (75-WA/Ener-4) (A) **Mr 95**
Four Variations of a Potassium Vapor Topping Cycle (75-WA/Ener-3) (A) **Mr 96**
High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**
Theoretical Performance of Vertical Axis Wind Turbines (75-WA/Ener-1) (A) **Mr 96**

Energy
Briefly Noted (ES) **O 19**
Energy and Primary Metals (ES) **D 16**
Energy: The Solar-Hydrogen Alternative (CB) **Je 123**
Four for Energy (WW) **Mr 76**

Energy Absorbers
Analysis and Design of Disposable Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**

Energy Alternatives
Energy Alternatives: A Comparative Analyses (CB) **Ap 108**
Industry's Energy Alternatives (ES) **Ja 11**

Energy Assessments
A Methodology of Technology Analysis with Application to Energy Assessment (75-WA/TS-8) (A) **Mr 94**

Energy Balance
Energy Payback (C) **Ag 42**

Energy Conservation
A Cozy Hearth (ES) **N 15**
Energy Conservation via Btu Meters (BTR) **Ap 60**
Energy Conservation Considerations for the Design of New Industrial Plants (76-IPC-Pwr-4) (A) **S 93**
Energy Conservation Contributors to Compete (NR) **Ag 60**
Energy Conservation in a Large Chemical Company (76-IPC-Pwr-5) (A) **S 93**
Engineering Forum to Discuss Energy Conservation (NR) **Mr 66**

An EPIC Booklet (ES) **Ap 23**
Evaluation of the Theoretical Potential for Energy Conservation in Seven Basic Countries (CB) **O 106**
Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**
Pipe Insulation as Energy Conserver (BTR) **Ag 45**
A "Show and Tell" on Energy Conservation **Ag 82**
Words from Washington **Je 74**

Energy Consumption
World Energy Consumption (ES) **O 19**

Energy Conversion
Energy Conversion Conference Hears of a Peaceful Use for the H-Bomb (NR) **N 58**
The Energy Farm (BTR) **F 45**
ERDA and the Advanced Power Conversion Program **My 24**
Mechanical Drive Turbines and Energy Conversion for the 80's (75-WA/Pwr-1) (A) **F 85**
Power Turbines for Ocean Thermal Energy Conversion Systems (75-WA/OcE-11) (A) **Ap 92**
Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**

Energy Costs
Is the Energy Cost Too High? (ES) **S 19**

Energy Crisis
Better Days for Coal? (ES) **Mr 18**
The Industrial Power Engineer Battles the Energy Crunch **Jl 76**
Japan Looks at Wave-Power Generation (BTR) **Ag 51**
More on "The Real Energy Crisis" (C) **Ja 35**
"Sincere Ignorance" Compounds Energy Crisis, "Engine Men" Hear **Je 92**
The Unabating Energy Crisis (NR) **Je 68**

Energy Cycles
More on "Energy Cycles" (C) **O 52**
Energy Economy in Home Heating (BTR) **Ap 52**

Energy Investment
The Energy Investment (ES) **S 19**

Energy Issues
Energy Issues: What is Your Opinion? **My 85**
A Look at Energy Issues **Ja 69**

Energy Levels
Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**

Energy Losses
"Heat Pictures" for Energy Study (BTR) **O 57**
Simulation-Gaming in Energy Management Education (75-WA/Mgt-2) (A) **Ap 96**

Energy Organizations
Conservation and Energy Organizations (WW) **O 78**

Energy Outlook
The Future á la Herman Kahn (ES) **O 18**

Energy Petitions
Solicited Signatures Support Nuclear Power and Coal (NR) **Mr 65**

Energy Policy
Government Responds to ASME Energy Statement (Ed) **S 17**

Energy Policy Act
Does the Energy Policy Act Set a National Policy? (WW) **F 62**
A Jigsaw Puzzle Approach to Energy (WW) **My 72**

Energy Policy Project
No time to Confuse (CB) **Ap 107**

Energy Pools
Seawater Energy (BTR) **D 59**

Energy Problems
The Wrong Directions (ES) **Ja 10**

Energy Recovery
In Situ Coal Gasification—A Unique Means of Energy Recovery **Mr 20**

Energy Research
High-Pressure Safety at the Lawrence Livermore Laboratory, An Energy Research Facility (76-PVP-66) (A) **D 104**
NU Energy Research Tops $2.5 Million (EN) **My 69**

Energy Research & Development Administration
EPRI + ERDA = Energy R&D (ES) **My 17**
ERDA and the Advanced Power Conversion Program **My 24**
ERDA's Too "Hardware-Oriented" (ES) **F 15**
New Technologies Will Soften Energy Crunch **My 77**
Nuclear Waste Management Symposium, preview (NR) **Ap 69**

Energy Resources
Energy Resources and Supply (CB) **D 106**

Energy Savings
How to Save Gasoline: Public Policy Alternatives for the Automobile (CB) **O 106**
Small Reactors + Helium Turbines = Near-Term Energy Savings **S 45**

Energy Sources
Bioconversion Bonanza (ES) **Jl 16**
The Cash in Trash (BTR) **Ap 60**
Geothermal Power—The "Sleeper" in the Energy Race **D 25**
Manufacturers Shift Energy Sources (ES) **Ag 19**
Power at the River Mouth (BTR) **Ap 53**
Of Tornadoes and New Energy Sources (NR) **O 66**

Energy Systems
Annual Review of Energy (CB) **N 104**

Energy/Environmental Interface
Systems Approach to R&D Planning for Energy/Environmental Interface (75-Pwr-2) (A) **Ja 110**

Engel, P. A. Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Engine Exhaust Emissions
Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**

Engineer Degree
New Engineer Degree (EN) **Ap 73**

Engineering
Engineering in the New Nation **My 18**
Engineering: A World View (Ed) **D 15**
The Existential Pleasures of Engineering (CB) **Ap 108**
Improving Productivity Through Engineering (NR) **Ja 56**
Interactive Engineering (BTR) **My 47**
Symposium on Applications of Computer Methods in Engineering (NR) **D 70**

Engineering Achievements
1975 Outstanding Engineering Achievements (NR) **Je 76**

Engineering Challenges
Engineering Challenges in the Western Hemisphere (NR) **D 69**

Engineering Classics
Re-publication of American Engineering Classics (NR) **Mr 67**

Engineering Cooperation
Cooperation in Engineering **Ja 12**

Engineering Design
Infrared Temperature Measurement Applied to Engineering Design Analysis (75-WA/TM-3) (A) **My 96**
Mohr's Circle and Its Applications to Engineering Design (76-DET-99) (A) **D 96**
Teaching Engineering Design in a Developing Industrial Community—The Hong Kong Situation (76-DE-20) (A) **Ag 101**

Engineering Design Course
New Course Pays Off (EN) **F 59**

Engineering Education
Couple Trades Home for Engineering Education (EN) **S 71**
Educating the Engineer (C) **My 40**
Engineering Education and Lifetime of Learning (CB) **Ag 102**
On Minority Programs in Engineering Education **Je 87**

Engineering Ethics
Dilemma of the Professional (C) **Je 46**
Engineering Ethics (C) **Mr 42**
Technical Papers and Ethics (C) **Mr 45**

Engineering Exhibitions
Engineering Exhibitions in the USSR (NR) **D 70**

Engineering Fundamentals Handbook
Handbook of Engineering Fundamentals (CB) **Mr 108**

Engineering Graduates
More Jobs/More Money for Engineering Grads (EN) **D 74**
Reduced Hiring Leaves 12% of 1975 Engineering Grads Without Jobs (EN) **Ja 61**

Engineering Management
Engineering Management—A Challenge in Leadership (76-DE-11) (A) **Ag 100**
A Model of Simulated Management Experience for Engineering Managers (75-WA/Mgt-5) (A) **Ap 96**
Ontario Hosts Joint Engineering Management Conference (NR) **S 67**

Engineering Materials
Deformation and Fracture Mechanics of Engineering Materials (CB) **D 107**

Engineering Minorities
ME Expands Program As Independent Agency (EN) **D 75**
Minorities in Engineering (C) **My 40**
NSPE-Ga. Tech Establish Two New Scholarships for Minorities (EN) **Ap 73**
Taking Task Force to Task (C) **Ja 36**

Engineering Politics
The Politics in Engineering (C) **Jl 41**

Engineering Professionalism
Unification Vacuum (C) **Ja 35**

Engineering Progress
Engineering Progress Through Trouble (CB) **My 108**

Engineering Registration
Correspondence on Correspondence Course (C) **Jl 42**

Engineering Software
Engineering Software—A National Resource (CT) **Ag 70**

Engineering Teams
Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule (75-WA/Mgt-1) (A) **Ap 96**

Engineering Training
Engineering Training With an International Dimension (EN) **Ja 62**

Engineering-Politics Gap
Can We Breach the Engineering-Politics Gap? **Ag 71**

Engineers
Engineers Week: Feb. 20–26 **N 65**
A Pleasant Surprise (C) **Ja 36**
Professional Development—Pulling It Together **Ap 40**
Robert Redford vs. the Average Engineer (C) **My 40**
Simplified Guide to Construction Management for Architects and Engineers (CB) **S 103**

Engineers Year-Book—1975
Kempe's Engineers Year-Book for 1975 (CB) **Jl 100**

Engineers' Salaries
Engineers' Salaries (C) **Mr 45**
Engineers' Salaries are on the Increase (NB) **Jl 62**

Engineer's Identity
The Engineer's Identity Crisis **Jl 70**

Engine-Flywheel System
Caddy on the Fly (BTR) **S 50**
Some Unusual Engines (CB) **Ap 107**

Englesman, C. *(author)* Heavy Construction Cost File: Unit Prices (CB) **Jl 101**

Entrance Regions
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) (A) **S 99**

Entrapments
A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**

Entropy
Returning to Entropy (C) **Mr 42**

Environmental Behavior
Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **Jl 91**

Environmental Conservation
Engineers Honored for Environmental Conservation (NR) **D 71**

Environmental Control
Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-21) (A) **O 95**
SPRINT I Environmental Control (76-ENAs-27) (A) **O 93**

Environmental Dilemmas
John Doe: Environmentalist (NB) **Ja 60**

Environmental Factors
Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Environmental Flammability
The Physics of Fire (BTR) **Je 57**

Environmental Impact
The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors (75-WA/NE-7) (A) **F 79**
Toward a Mathematical Theory of Environmental Monitoring (75-WA/Aut-7) (A) **Ap 93**

Environmental Organizations
World Directory of Environment Organizations (CB) **Je 123**

Environmental Parameters
Environmental Parameters of Shuttle Support for Life Sciences Experiments (76-ENAs-24) (A) **O 96**

Environmental Planning
Air Quality Considerations in Environmental Planning (75-WA/APC-12) (A) **Je 114**

Environmental Problems
Students to Conduct Studies on Environmental and Societal Problems (EN) **My 69**

Environmental Protection Agency
EPA Exchange Program (EN) **F 59**

Priorities in Pollution Control (NB) **Ja 59**

Environmental Revolution
Speaking Out—The ME in the Environmental Revolution **N 18**

Environmental Systems Conference
Aircraft Environmental Control Problems as a Result of Air Contamination (76-ENAs-13) (A) **O 94**
Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Docks (76-ENAs-25) (A) **O 95**
Auxiliary Payload Power System Thermal Control (76-ENAs-59) (A) **N 93**
Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**
Characteristics of Vacuum Wastewater Transfer Systems (76-ENAs-43) (A) **N 91**
CO_2 and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**
CO_2 Removal from Submarines Atmosphere by IR-45: Feasibility Study (76-ENAs-4) (A) **O 92**
Combined Short and Long Duration Self-Rescue Breathing Apparatus (76-ENAs-31) (A) **O 96**
Conceptual Design of a Biological Specimen Holding Facility (76-ENAs-30) (A) **O 96**
Cooling Methods for Aircraft Electronics Equipment (76-ENAs-51) (A) **N 92**
A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**
Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**
Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**
The Development of a Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**
Development of an On-Board Oxygen Generating System (76-ENAs-9) (A) **O 93**
The Development of a Positive Isolation Disconnect (76-ENAs-12) (A) **O 94**
Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**
Development Testing of a Self-Contained Heat Rejection Module (76-ENAs-33) (A) **O 96**
Development of a Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**
Direct Raw Sewage Reverse Osmosis: Reclamation of Waste Water at San Diego (76-ENAs-45) (A) **O 97**
A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**
The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**
Effect of Nitrogen Limitation on Metabolic Activities of Activated Sludge (76-ENAs-40) (A) **O 97**
The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**
Electrolytic Urine Pretreatment (76-ENAs-19) (A) **O 95**
Environmental Parameters of Shuttle Support for Life Sciences Experiments (76-ENAs-24) (A) **O 96**
An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**
Experimental Study of the Constituents of Space Wash Water (76-ENAs-11) (A) **O 94**
Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-2) (A) **O 95**
Forecasting Impacts on Solid Waste Resource Recovery Systems (76-ENAs-46) (A) **O 97**
A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**
Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**
Heatshield Sizing for Erosive Environments (76-ENAs-36) (A) **O 97**
Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**
Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**
Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 96**
A Mature Bosch CO_2 Reduction Technology (76-ENAs-14) (A) **O 95**
Microbiology Studies in the Space Shuttle (76-ENAs-23) (A) **O 95**
Mine Rescue Team Helmet (76-ENAs-69) (A) **N 95**
The Mini Boat: A Life Boat for Helicopter Crewmen (76-ENAs-61) (A) **N 94**
Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**
New Cabin Pressure Control System for DC-9 Aircraft (76-ENAs-3) (A) **O 92**
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**
Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**
Operational Experience with a Vacuum Collection and Waste Incineration System Aboard a U.S. Coast Guard Cutter (76-ENAs-47) (A) **N 92**
Operational Plans for Life Science Payloads—from Experiment Selection Through Postflight Reporting (76-ENAs-63) (A) **N 94**
Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**
Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**
Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**
Planning for Biomedical Research in Space: The Visiting Research Scientist (76-ENAs-67) (A) **N 94**
Planning for Life Sciences Research in Space (76-ENAs-52) (A) **N 92**
The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**
Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**
A Regenerable CO_2 and Humidity Control System for Shuttle (76-ENAs-60) (A) **N 93**
The Role of Shuttle in Health Care Systems Development for Space Stations (76-ENAs-29) (A) **O 96**
Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**
The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**
Spacelab Environmental Control System (76-ENAs-58) (A) **N 93**
Spacelab Mission Simulation—II (76-ENAs-22) (A) **O 95**
SPRINT I Environmental Control (76-ENAs-27) (A) **O 93**
The Technology of Solid Waste Air Classification for Resource Recovery (76-ENAs-50) (A) **N 92**
Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**
Thermal Control of the International Ultraviolet Explorer (76-ENAs-38) (A) **O 97**
Thermal Control Systems for Low Temperature Shuttle Payloads (76-ENAs-65) (A) **N 94**
Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**
Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**
Urban Solid Waste Processing—An Approach Developed by Continental Can Company, Inc. (76-ENAs-41) (A) **O 97**
Vibration Detection of Component Operability (76-ENAs-18) (A) **O 95**
Waste Heat Management of Steam-Electric Power Plants (76-ENAs-44) (A) **N 91**

Environmental Testing
Environmental Testing (IF) **N 57**

Ephraim, M., Jr. A Versatile Two-Cycle Diesel Engine—The EMD Model 645 Series (76-DGP-5) (A) **Ag 97**

Epicyclic Gears
Epicyclic Gearing for Gas Turbine Main Propulsion (76-GT-24) (A) **Jl 89**
High Performance Epicyclic Gears for Gas Turbines (76-GT-88) (A) **Jl 97**

Epitrochoidal Curves
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**

E³ Program
E³ Rates A+ (C) **Mr 43**

Epoxy Resin
Epoxy Resin Pumps (IF) **Jl 54**

Epstein, M. Transient Behavior of a Volume-Heated Boiling Pool (75-WA/HT-31) (A) **Ap 103**

Equal Opportunity
A Protest . . . (C) **Jl 40**; . . . and a Reply (C) **Jl 41**

Equatorial Ozone Layer
Measure Equatorial Ozone Layer (BTR) **F 44**

Equilibrium Testing
CO_2 and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**

Equipment Failures
Why Equipment Fails (ES) **N 14**

Equivalence Principle
Space Probe Tests Einstein's "Equivalence Principle" (BTR) **S 56**

Equivalent Inclusion Method
Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**

Erdlen, J. D. *(author)* Job Hunting Guide: Official Manual of the Employment Association (CB) **F 89**

Erdman, A. G. An Approximate Method for the Dynamic Analysis of Elastic Linkages (76-DET-49) (A) **N 102**; Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**

Erdogan, F. Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**

Erickson, P. Stability of Cyclic Dynamical Systems (75-WA/Aut-13) (A) **Ap 94**

Ernst, W. Momentous Momentum (C) **N 42**; On Moving the Moon, etc. (C) **S 49**; SI Comments (C) **F 39**

Erosion
A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**

Erosive Environments
Heatshield Sizing for Erosive Environments (76-ENAs-36) (A) **O 97**

Error Analysis
Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**
Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**

Ertepinar, A. On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**

Eshbach, O. W. *(editor)* Handbook of Engineering Fundamentals (CB) **Mr 108**

Eshel, A. Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**

Estrine, E. Control of a Gas Turbine HTGR (76-GT-97) (A) **Jl 98**

Etsion, I. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**; The Hydrodynamics of a Plug Bearing (75-Lub-36) (A) **Ja 122**

European Space Agency
Two Antennas for ESA (IF) **Ag 57**

Eusepi, M. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**

Eutectic Airfoils
Development and Design of Directionally Solidified Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **Jl 90**

Eutectic Alloys
Heat Treating of a Lamellar Eutectic Alloy ($\gamma/\gamma' + \delta$) (76-GT-103) (A) **Ag 90**

Evans, D. J. Powder Metallurgy Processing of High Strength Turbine Disk Alloys (76-GT-96) (A) **Jl 98**

Evans, N. A. Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**

Evaporator Design
Evaporator Design for Sea Solar Power Cycles (75-WA/Sol-5) (A) **Mr 93**

Evolutionary Speculations
On Sagan, Speculation, Creation (C) **N 43**

Exchange Programs
EPA Exchange Program (EN) **F 59**

Exhaust Emissions
The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission (75-WA/GT-11) (A) **F 81**
Measurement of Exhaust from Two J-58 Engines at Simulated Supersonic Cruise Flight Conditions (76-GT-8) (A) **Jl 87**

Exhaust Valve Testing
Automated Hardness Check (BTR) **S 58**

Existence Criteria
Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**

Exley, L. M. A Practical Review of the Cause and Control

of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers (75-WA/CD-8) (A) **My 99**

Expander Geometry
Nonlinear Expanders for Diesel-Cycle Application—Part I: An Introduction to Geometric Concepts and Analysis (76-DGP-15) (A) **Ag 98**; Part II: Temporal Effects (76-DGP-16) (A) **Ag 99**; Part III: Design Considerations (76-DGP-17) (A) **Ag 99**

Experimental Stress Analysis
Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**

Explosive Media
The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **Jl 87**

Extension Springs
Extension Springs—Stress at the Body Radius (76-DE-18) (A) **Ag 101**

Extensional Deformations
Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Extensional Stress Pulses
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**

Extravehicular Activity
A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**

Extravehicular Mobility Units
Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**

Extreme Velocity Ratios
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**

Extrusion
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**

Eyth, J., Jr. Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-21) (A) **O 95**

Ezzat, H. A. On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) (A) **Ja 118**

F

Face Milling Cutter
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**

Faceted Fixed Mirror Concentrators
Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Faculty Unionization
Faculty Unionization and Collective Bargaining (CB) **Ap 107**

Fader, G. B. Impact of Fuel Rod Design on the Loss-of-Coolant Accident Analysis (75-WA/HT-80) (A) **My 105**

Failure Analysis
Failure Analysis of a Redundant Reeving Hoist (76-DE-21) (A) **S 90**

Failure Criteria
Using the Contour Line Method of Representing Failure Criteria as a Design Aid (76-DET-75) (A) **D 94**

Failure Noises
Noises of Failure (BTR) **My 56**

Failures
Application of a Finite Element Computer Program for Studying Failures and Affecting Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**

Fairbanks, D. R. Nuclear Reactions (C) **Ap 48**

Fairbanks, J. W. Coating Technology for the Marine Gas Turbine Airfoil Application (76-GT-111) (A) **Ag 91**

Falcon, J. A. Elections to Fellow Grade **S 88**

Fan Blades
Advanced Composite Fan Blade Flight Evaluation Program (76-GT-75) (A) **Jl 95**

Fan Rotors
Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Laser Velocimeter (76-GT-49) (A) **Jl 92**

Fanaritis, J. P. TEMA and the Nuclear Power Industry (75-Pwr-17) (A) **Ja 112**

Farm Operations
Recognition and Reduction of Hearing Damage Risk During Farm Operations (75-WA/SAF-3) (A) **Je 117**

Farrell, R. A. Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**

Fast Flux Test Facility
Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**
Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**

Fastener Failures
Preventing Fastener Failures (BTR) **N 49**

Fastener Manufacturers
Troubleshooting in Real Time (BTR) **D 57**

Fasteners
Eccentric Limit Load on Fasteners (75-WA/DE-6) (A) **Mr 105**
On Eccentrically Loaded Fasteners (75-WA/DE-9) (A) **Mr 104**

Fatigue
Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**
Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) (A) **Je 111**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**

Fatigue Crack Growth
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**
The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**
The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**
Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**

Fatigue Design
The Role of Fracture Mechanics in Fatigue Design (76-DE-5) (A) **Ag 100**

Fatigue Experiments
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

Fatigue Life Data
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**

Fatigue Life Distribution
A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) (A) **Mr 107**

Fatigue Loading
On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**

Fatigue Results (Re-analysis)
Re-analysis of Cruciform Specimen Fatigue Results by Statistical Methods (75-Pet-46) (A) **Ja 118**

Faulkner, L. L. Acoustic Transmission of Pipe Wrapping Systems (75-WA/Pwr-7) (A) **F 85**

Fault Analysis
Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **Jl 98**

Fault Diagnosis
The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**

Fazekas, G. A. Eccentric Limit Load on Fasteners (75-WA/DE-6) (A) **Mr 105**; On Eccentrically Loaded Fasteners (75-WA/DE-9) (A) **Mr 104**; On the Effect of Variation of Friction with Belt Speed (75-WA/DE-27) (A) **Mr 106**; On Optimal Bolt Preload (75-WA/DE-14) (A) **Mr 105**; On Reciprocating Toroidal Seals (75-WA/DE-20) (A) **Mr 106**

Feagan, R. W., Jr. Surprised at Dissent (C) **Jl 40**

Federal Power Commission
FPC's Wrong (ES) **Je 18**

Federal Research & Development
Getting the Inside Scoop on Federal R&D **Ag 37**

Federal Technology Transfer
Federal Technology Transfer: Results of a Survey of Formal Programs (75-WA/Aero-4) (A) **My 98**

Feedback Control
Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**

Fedor, O. H. Using RMS Techniques for Designing RMS and Operating Hazardous Facilities **N 21**

Fein, R. S. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Felbeck, D. K. Made for Each Other (C) **My 45**

Feldman, K. T. Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**

Felix, P. C. Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**

Felland, J. R. Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**

Fellow Grade
A Matter of Fellowship (PS) **Ap 77**

Fenton, R. G. Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**; The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**

Ferguson, E. S. *(reviewer)* Philadelphia's Philosopher Mechanics: A History of the Franklin Institute 1824–1865 (CB) **Ja 126**

Fermentation
The Energy Farm (BTR) **F 45**

Fernandes, R. The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) (A) **S 98**

Ferrara, A. Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Decks (76-ENAs-25) (A) **O 95**

Ferriter, N. Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**

Ferrous Materials
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**

Fertilizer Production
Use It for Fertilizer (ES) **S 19**

Fessett, D. J. Study of Light Weight Turbine Transmission Systems (76-GT-121) (A) **Ag 92**

Fettahlioglu, O. A. Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Fetteroll, F. P. Testing of Forgings (75-Pet-43) (A) **Ja 118**

Fevrier, D. Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Fevrier, G. Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Fey, F. L. Monticello Nuclear Plant Radwaste System Operating Experience (75-Pwr-24) (A) **Ja 113**

Fiber Optic Transducers
Design of a Fiber Optic Pressure Transducer (75-WA/DE-8) (A) **Mr 105**

Fiber Optics
The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **Jl 87**

Fiber Preparation
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**

Fiber Properties
The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**

Fiber Reinforced Materials
Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **Jl 98**

Fiberglass Insulation
Fiber Glass Pipe Insulation to 650° F (BTR) **Mr 48**

Fiberglass Reinforced Plastic
Molded FRP: Challenge to Metals (BTR) **F 43**

Fiber-Reinforced Beams
Dynamic Behavior of Ideal Fiber-Reinforced Rigid-Plastic

Beams (76-APM-21) (A) **S 100**

Fiber-Reinforced Composites
Making Better Musical Instruments from Graphite Composites **Mr 25**

Fiber-Reinforced Plastics
Real "Featherweights" (ES) **My 16**

Fibrous Particle Size
Particle Measurements for Textile Airborne Process Waste Control (76-Tex-9) (A) **N 96**

Fichter, E. F. Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Algebraic Loci and Couplings (76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**

Field, G. J. An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**

Field Measurements
Field Measurments of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**

Field Observations
Simulation and Field Observation of Heated Discharge Dispersion Patterns (75-WA/HT-61) (A) **My 103**

Filament Yarn Technology
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) (A) **Ja 124**

Filament Yarns
On the Extension of Elastic Two-Ply Filament Yarns (75-WA/APM-15) (A) **Je 120**

Fillet-Type Welds
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Fillet Welds
Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**

Fillo, J. A. A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 106**

Film Boiling
Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**

Film Coatings
Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**

Film Cooling
The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) (A) **F 82**

Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **Jl 97**

The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slots of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**

The Effectiveness of Two-Dimensional Film-Cooling Over Curved Surfaces (76-HT-31) (A) **O 102**

An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**

Experimental Verification of Film-Cooling Concepts on a Turbine Vane (75-WA/GT-21) (A) **F 83**

Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**

Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**

Film Cooling of Gas Turbine Blades: A Study of the Effect of Large Temperature Differences on Film Cooling Effectiveness (76-GT-2) (A) **Jl 86**

Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**

Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **Jl 96**

Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**

Onset of Separation in Film Cooling Following a Slot (75-WA/HT-16) (A) **Ap 101**

Prediction of Film-Cooling Effectiveness in an Unsteady Turbulent Boundary Layer (76-HT-28) (A) **O 101**

Film Thickness
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**

Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**

Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**

Film-Cooling Slots
The Effectiveness of Combined Tangential and Normal Film-Cooling Slots with Finite Lip (76-HT-30) (A) **O 101**

Filtration
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**

Finishing
Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**

Finite Cylinders
Analysis of Finite Cylinders Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**

Finite Difference Approximations
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**

Finite-Difference Methods
Evaluation of Unsteady State Conduction Heat Transfer by a Noniterative Finite-Difference Method (76-HT-72) (A) **N 90**

Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method (75-WA/HT-81) (A) **My 105**

Finite-Difference Solutions
A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**

Finite-Displacement Analysis
A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**

Finite-Element Alternatives
Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**

Finite-Element Analysis
Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

Finite-Element Formulation
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (75-WA/HT-95) (A) **My 107**

Finite-Element Methods
Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**

Application of Finite Element Technique to the Design Technology Transfer (76-DET-74) (A) **D 94**

A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**

Finite Elements
An Axisymmetric Finite Element in Natural Coordinates (75-WA/PVP-24) (A) **Ap 98**

The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) (A) **Mr 106**

Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**

A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Finite-Element Simulation
Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **Jl 96**

Finite Ring Methods
Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**

Finned Tubes
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**

Fire
The Physics of Fire (BTR) **Je 57**

Fire Detection
Fire Article Sparks Controversy (C) **O 50**
Forest Fire Dectector (BTR) **D 60**

Firefighter's Breathing System
Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**

Fireside Corrosivity
Fireside Corrosivity Studies on Austenitic Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**

Fireside Problems
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) (A) **My 99**

Firetube Boilers
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**

First Critical Speeds
Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**

Fish, R. W. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) (A) **F 82**

Fischer, D. D. In Situ Coal Gasification—A Unique Means of Energy Recovery **Mr 20**

Fischer, F. J. The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**

Fisher, F. G. Elections to Fellow Grade **Ja 108**

Fisher, H. N. Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) (A) **My 104**

Fitch, J. B. The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**

Five-Link Mechanisms
Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**

Fixed Bed Gasification
Gasification of Solid Waste in Fixed Beds **Jl 24**

Fixed Edge Bending
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**

Fixemer, J. V. A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**

Flame Initiation
An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **Jl 88**

Flame Propagation
The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **Jl 87**

Flame Radiation
Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion (76-HT-57) (A) **N 88**

Flame Spread
Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**

Flanagan, R. C. Regenerative Drive for Subway Trains Part 1: Mechanical Accumulator Design (76-RT-1) (A) **S 94**; Part 2: Overall System Model (76-RT-2) (A) **S 94**; Part 3: System Evaluation (76-RT-3) (A) **S 94**; Part 4: Overall System Performance (76-RT-4) (A) **S 94**

Flange Wear
Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**

Flanges
The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**

Flank-Face Wear
An Analysis of Tool Life Based on Flank-Face Wear, Part 1: Theory (75-WA/Prod-28) (A) **Mr 103**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) (A) **Mr 104**

Flank Wear
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**

The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Flapping Vibrations
An Experimental Study on Variations of Rotational Speed and Flapping Vibrations in Belt Drives (76-DET-102) (A) **D 97**

Flash Pyrolysis
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**

Flashing Flow
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

Flat Box Flows
Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**

Flat-Plate Solar Collectors
Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**

Flat Plates
Free Convection Along a Non-Isothermal Vertical Flat Plat (75-WA/HT-15) (A) **Ap 100**
Flaw Tolerance
Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-48) (A) **D 103**
Fleck, J. A., Jr. Analysis of Efficient Impulsive Delivery and Plate Rupture by Laser-Supported Detonation (75-WA/HT-50) (A) **Ap 104**
Fleeter, S. An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **JI 88**
Fleischer, R. L. *(author)* Nuclear Tracks in Solids: Principles and Applications (CB) **F 89**
Fleming, M. L. Development Testing of a Self-Contained Heat Rejection Module (76-ENAs-33) (A) **O 96**
Flexibility
Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**
Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**
Flexible Cam Followers
Dynamics of High-Speed Cam Mechanisms with Damped Flexible Followers Driven by Flexible Camshafts (76-DET-63) (A) **D 92**
Flexible Freight Cars
Investigation of a Torsionally Flexible Freight Car (75-WA/RT-13) (A) **F 78**
Flexible Rail Vehicles
A Computer Method for Calculating Dynamic Responses of Nonlinear Flexible Rail Vehicles (76-RT-5) (A) **S 94**
Flexible Rotors
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**
Flexible Walls
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**
Flight Evaluations
Advanced Composite Fan Blade Flight Evaluation Program (76-GT-75) (A) **JI 95**
Flitner, D. P. A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications (75-Pwr-30) (A) **Ja 114**
Floating Museum
Fresh Water for a Floating Museum (ES) **Ag 19**
Florman, S. C. *(author)* The Existential Pleasures of Engineering (CB) **Ap 108**
Flory, J. F. Development of the Single Anchor Leg Mooring (75-Pet-44) (A) **Ja 117**
Flot, R. Secondary Flows in Compressor Bladings (76-GT-57) (A) **JI 93**
Flow
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**
Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**
Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**
Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **JI 94**
Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**
Design of Particulate Direct Contact Heat Exchanger: Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**
Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**
Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**
Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-in. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**
Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**
A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**
The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**
Numerical Study of Some Three-Dimensional Laminar Free-Convective Flows (76-HT-34) (A) **O 101**
The Particle-Source-In-Cell (PSI-Cell Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flows) (75-WA/HT-1) (A) **Ap 99**
Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**
On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**
Two-Phase Pressure Drop Accross Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**
Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**
Flow Analysis
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**
Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**
Flow Coefficient Variations
Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles (75-WA/FE-19) (A) **Je 110**
Flow Distribution
Flow Distribution Manifolds (76-FE-7) (A) **Ag 94**
Flow Fields
Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**
Flow Friction Characteristics
Perforated Heat Exchanger Surfaces. Part 2—Heat Transfer and Flow Friction Characteristics (75-WA/HT-9) (A) **Ap 100**
Flow Instability
A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**
Flow Investigations
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) (A) **Ag 95**
Flow Measurement Probes
Investigation of the Properties of the Annubar, A Flow Measurement Probe (75-WA/FM-2) (A) **Je 118**
Flow Measurements
Detailed Flow Measurements in a Four Stage Axial Compressor (76-GT-46) (A) **JI 92**
Flow Measuring Devices
Flow Measuring Devices (76-DE-23) (A) **S 90**
Flow Models
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**
Flow Oscillations
An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**
Flow Patterns
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
Flow Phenomena
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**
Flow Prediction
Flow Prediction in Axial Flow Compressors Including End-Wall Boundary Layers (76-GT-72) (A) **JI 95**
Flow Regime Transitions
A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
Flow Resistance
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Flow Separation
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**
Flow Sweeping
SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**
Flow Velocity
Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Laser Velocimeter (76-GT-49) (A) **JI 92**
Flow Visualization
Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**
Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine (75-WA/Ener-4) (A) **Mr 95**
Flow-Induced Vibrations
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**
Flow-Through Reservoir
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**
Flue Gas
A Psychrometric Method for Determining Water Vapor in Flue Gas (75-WA/APC-8) (A) **Je 113**
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**
Fluid Amplifiers
Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
Fluid Bed Boilers
Prediction of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**
Fluid Classifier
Fluid Classifier and Disseminator (BTR) **S 57**
Fluid Containers
Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**
Fluid Film Bearings
Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **JI 97**
Fluid Flow
Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**
Slippery Water (BTR) **JI 45**
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) (A) **Ja 120**
Fluid Layers
Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Fluid Mechanics
Fluid Mechanics and its Application (CB) **JI 100**
Fluid Mechanics for the Valve Designer (76-PVP-71) (A) **D 105**
Fluid Meters
A Design Method on Propeller Current Meters (75-WA/FM-5) (A) **Je 118**
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**
Investigation of the Properties of the Annubar, A Flow Measurement Probe (75-WA/FM-2) (A) **Je 118**
Large Capacity Petroleum Measurement Systems (75-WA/FM-3) (A) **Je 118**
Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**
Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) (A) **Je 119**
Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**

Fluid Mixing
Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**
Fluid Power
A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **D 94**
A Note on the Transfer of Technology Between Universities and the Fluid Power Industry in the U.K. (76-DET-85) (A) **D 95**
The Role of Modeling and Simulation in the Design and Appraisal of Fluid Power Systems (76-DET-92) (A) **D 96**
Fluid Sealing
Fluid Sealing Text (BTR) **N 49**
Fluid Seals
Rotating Shaft Seals: Part 2—The Magnetic Fluid Seal Considered in the Context of Seven Previous Basic Types (76-DET-97) (A) **D 96**
Flury, R. L. Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**
Fluid Transmission Lines
The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**
Fluid-Delivery
Constant-Rate Fluid-Delivery (BTR) **O 61**
Fluidic Amplifiers
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**
Fluidic Controls
Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-21) (A) **O 95**
Fluidic Velocity Sensors
Fluidic Velocity Sensor for Gaseous Effluents (75-WA/APC-6) (A) **Je 113**
Fluidics
An All-Pneumatic Artificial Ventricle Driving System (75-WA/Flcs-2) (A) **Je 114**
Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate (75-WA/Flcs-8) (A) **Je 115**
A Flueric Laminar Operational Amplifier Scaler (75-WA/Flcs-3) (A) **Je 114**
Fluidically Controlled Active Suspension Systems for High Speed Ground Vehicles (75-WA/Flcs-6) (A) **Je 115**
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**
Some Experiments on Laminar Wall Jets (75-WA/Flcs-7) (A) **Je 115**
Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) (A) **Je 115**
The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**
Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion (75-WA/Flcs-4) (A) **Je 114**
Fluidized-Bed Boilers
NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**
Fluidized Bed Combustors
Fluidized-Bed Combustion Miniplant (BTR) **Mr 54**
Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**
Pollution-Free Power at ANL (BTR) **N 51**
Fluidized Bed Furnace
Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine (75-WA/Ener-4) (A) **Mr 95**
Fluidized Beds
Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Heat Transfer to Horizontal Tubes in Shallow Fluidized Beds (76-HT-67) (A) **N 89**
Heat Transfer to Tubes in Fluidized Beds (76-HT-75) (A) **N 90**
Fluids
Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) (A) **S 99**
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**
Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**
Some Heat Transfer Performance Criteria for High Temperature Fluid Systems (75-WA/HT-103) (A) **Je 116**
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**
Fluids Engineering
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Model (75-WA/FE-11) (A) **Je 109**
An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**
Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall (75-WA/FE-20) (A) **Je 110**
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**
An Experimental Investigation of the Swirling-Flow Performance of an Annular Diffuser at Low Speed (75-WA/FE-17) (A) **Je 110**
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**
Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles (75-WA/FE-19) (A) **Je 110**
Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**
Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**
Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) (A) **Je 108**
Predicting Optimum Two-Stage Valve Closure (75-WA/FE-2) (A) **Je 108**
Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (76-WA/FE-15) (A) **Je 110**
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) (A) **Je 108**
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**
Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**
A Study of the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines (75-WA/FE-18) (A) **Je 110**
A Study on Multi-Element Cascades and Airfoils (75-WA/FE-3) (A) **Je 108**
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**
Symmetrical Laminar Channel Flow with Wall Suction (75-WA/FE-6) (A) **Je 108**
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**
Flutter Motion
Optical Determination of Rotating Fan Blade Deflections (76-GT-48) (A) **Jl 92**
Flutter Resistance
Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **Jl 89**
Flux Hole Punches
Increasing Punch Life (BTR) **D 54**
Flux Models
An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**
Fly Ash
Flyash Helps Pollutants Escape (ES) **Ag 19**
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**
Fly-Shuttle Looms
Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) (A) **Ja 125**
Flywheel Energy
An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **Jl 90**
Flywheel-Powered Cars
Caddy on the Fly (BTR) **S 50**
Foil Bearings
The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**
Folayan, C. O. The Effectiveness of Combined Tangential and Normal Film-Cooling Slots with Finite Lip (76-HT-30) (A) **O 101**; The Effectiveness of Two-Dimensional Film-Cooling Over Curved Surfaces (76-HT-31) (A) **O 102**
Folenta, D. J. Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **Jl 90**
Foley, C. J. Analysis of Overpressure Conditions in an Isolated Piping Section (76-PVP-8) (A) **D 98**
Foods
A Miniature Thermal Conductivity Probe for Foods (76-HT-60) (A) **N 88**
Foodstuffs
Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**
Forced Convection
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**
Forced Convection Flow
Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
Forcing Functions
Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**
Forecasting
Forecasting Engineering Needs (CT) **Mr 78**
Foreign Conventions
The Foreign Convention—An Enticing Venture (NB) **Jl 62**
Forest Energy
Forest Energy and Economic Development (CB) **Ag 103**
Forest Fires
Forest Fire Detector (BTR) **D 60**
Forestry Wastes
Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**
Forging
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**
Forgings
New Design of PWR Reactor Vessel Using Large Forgings (76-PVP-73) (A) **D 105**
Testing of Forgings (75-Pet-43) (A) **Ja 118**
Formability Parameters
Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) (A) **Mr 102**
Fornes, R. E. Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**
Forrestal, M. M. Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**
Forster, L. L. Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**
Forsythe, R. A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**
Fortescue, P. Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **Jl 97**
FORTRAN IV
Problems in Using a Program (CT) **Je 86**
FORTRAN Programs
Computer-Aided Design (IF) **Mr 58**
Forward-Facing Step
The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**

Fossil Fuel
More Fossil than Nuclear? (ES) **O 18**
Fossil Fuel Systems
120,000 More MW by 1980 (ES) **F 15**
Fossil Fueled Power Plants
An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**
Fossil Generating Units
Fossil vs. Nuclear Reliability (BTR) **Mr 54**
Foster, A. R. Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR (75-WA/HT-44) (A) **My 101**
Foster, K. A Note on the Transfer of Technology Between Universities and the Fluid Power Industry in the U.K. (76-DET-85) (A) **D 95**
Foster, T. F. Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**
Foundation Geometry
On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) (A) **S 101**
Foundation Settlement
Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**
Four-Bar Function Generators
Design of Four-Bar Function Generators With Mini-Max Transmission Angle (76-DET-8) (A) **N 97**
Four-Bar Linkages
On the Algebra of Four-Bar Linkage Centrode Curves (76-DET-13) (A) **N 98**
Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**
Momentum Balancing of Four-Bar Linkages (76-DET-28) (A) **N 99**
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**
Four-Bar Mechanisms
Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**
Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**
Four-Bar Path Generation
A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**
Four-Layer Flow Models
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**
Four-Link Mechanisms
Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**
Fowler, E. D. High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
Fowlie, D. W. Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**
Fowlkes, E. B. Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**
Fox, R. L. For a "Spouses' Auxiliary" (C) **Ap 49**
Fraas, A. P. A Cesium Vapor Cycle for an Advanced LMFBR (75-WA/Ener-5) (A) **Mr 96**; Heat Exchangers for High Temperature Thermodynamic Cycles (75-WA/HT-102) (A) **Je 116**
Fracture
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) (A) **Mr 102**
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**
Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**
Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**
Fracture Mechanics
Deformation and Fracture Mechanics of Engineering Materials (CB) **D 107**
Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients (75-WA/PVP-3) (A) **Ap 97**
The Role of Fracture Mechanics in Design Technology (76-DET-58) (A) **N 103**
The Role of Fracture Mechanics in Fatigue Design (76-DE-5) (A) **Ag 100**
Fracture Strength
Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**
Fracture Toughness
Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**
Prediction of Toughness Behavior Using Precracked Charpy Specimens (75-Pet-25) (A) **Ja 115**
Francis Turbines
Turbines for Inga II (BTR) **My 61**
Frangiadakis, M. H. Legislating Land Use (WW) **Ja 66**
Frank, A. A. The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**
Franke, M. E. The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**
Franklin Institute
Philadelphia's Philosopher Mechanics: A History of the Franklin Institute 1824–1865 (CB) **Ja 126**
Frant, M. S. Development Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**
Frarey, J. L. Influence of Shaft Runout on Vibration Analysis (76-DE-38) (A) **S 92**
Fraser, A. S. Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**
Fraser, W. H. *(editor)* Pump Handbook (CB) **Ag 102**
Fraud Security
Laser Beams Prevent Fraud (IF) **N 56**
Free Convection
Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**
Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Free Convection Along a Non-Isothermal Vertical Flat Plat (75-WA/HT-15) (A) **Ap 100**
Heat Transfer in a Corona Discharge **O 44**
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**
Free Edges
On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**
Free Falling Drops
Heat and Mass Transfer from Freely Falling Drops (75-WA/HT-37) (A) **Ap 103**
Freeman, T. L. Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**
Freeman, V. D. A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) (A) **Ap 95**
Free Stream Turbulence
Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**
Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**
Freezing
The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**
Freezing Cells
A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**
Freight Cars
Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**
Investigation of a Torsionally Flexible Freight Car (75-WA/RT-13) (A) **F 78**
A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**
Parametric Studies on a Railroad Freight Car Mathematical Model (75-WA/RT-11) (A) **F 78**
Freight Car Truck Problems
Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**
French, K. E. Justified Pride (C) **S 49**; For Membership Control of Dues (C) **Ap 49**; More on "The Real Energy Crisis" (C) **Ja 35**
Freon Gas
Carbon/Graphite Bearings (BTR) **Jl 46**
Frequencies
Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**
Frequency Response Conversion
Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion (75-WA/Flcs-4) (A) **Je 114**
Freudenstein, F. On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**; Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms Part 1: Theory (76-DET-24) (A) **N 99**; Part 2: Applications (76-DET-25) (A) **N 99**; The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A) **N 97**; Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**
Freund, L. B. Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**
Frick, P. A. The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**
Friction
On the Effect of Variation of Friction with Belt Speed (75-WA/DE-27) (A) **Mr 106**
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**
Friction Factors
Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**
Frictional Heating
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**
Frictional Sliding
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**
Friedlaender, G. Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**
Frohrib, D. A. An Approximate Method for the Dynamic Analysis of Elastic Linkages (76-DET-49) (A) **N 102**; Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**; Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**
Frohrib, F. A. A Vibration Isolation Strategy for Small Engines with Unbalance at One-Third Operating Speed: The Wankel (76-DE-27) (A) **S 91**
Frost Formation
Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**
Fryxell, R. E. Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **Jl 91**
Fuel-Air Ratios
Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Jl 87**
Fuel Burning
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**
Fuel Cells
Fuel Cells: Commercial by 1980 (ES) **Je 18**
Fuel Conservation
Fuel Conservation and the Breeder Reactor **Mr 28**
Fuel Consumption
Improved Specific Fuel Consumption of Open Cycle Gas Turbines by Utilization of Waste Heat (76-GT-45) (A) **Jl 92**
Reduction of Gas Turbine Fuel Consumption on Gas Pipelines (76-GT-80) (A) **Jl 96**
Fuel Conversion
CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**

Fuel Costs
Minimizing Fuel Costs (75-WA/Pwr-13) (A) **F 86**
Fuel Deposits
Deposits from Heated Gas Turbine Fuels (76-GT-9) (A) **JI 87**
Fuel Economy
Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**
Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**
Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**
Fuel Impurities
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**
Fuel Injection
The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**
The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**
Fuel Mixing System
Breakthrough: Cars Can Run on Water and Fuel Mix (EN) **N 67**
Fuel Pumps
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**
Fuel Rack System
Elbow Room? (ES) **D 17**
Fuel Rod Cladding
Evaluation of Fuel Rod Cladding Strength in Steady and Non-Steady Reactor Operation (75-WA/HT-74) (A) **My 104**
Fuel Rods
COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**
Impact of Fuel Rod Design on the Loss-of-Coolant Accident Analysis (75-WA/HT-80) (A) **My 105**
Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78) (A) **My 105**
Vibratory Wear of Fuel Rods (75-WA/HT-79) (A) **My 105**
Fuel Savings
The Fuel-Saving Potential of Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**
Fuel Savings by Deactivating 8 Power Cylinders on a V-16 Engine (76-DGP-10) (A) **Ag 98**
Fuel Viscosity
Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**
Fuels
CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**
Combustion Noise in Industrial Burners (75-WA/Fu-5) (A) **My 94**
The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
Emulsions as Fuels (75-WA/Fu-3) (A) **My 95; N 36**
An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**
Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **JI 96**
An Investigation on the Diffusion of Momentum and Mass of Fuel in a Diesel Fuel Spray (76-DGP-1) (A) **Ag 96**
The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**
Water Hyacinths Make Great Fuel (ES) **O 19**
Fuels Bound Nitrogen
A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**
Fugitive Dust
Fugitive Dust Gets Out of Hand (NB) **Ap 71**
Fujisaki, Y. Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**
Fujita, H. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Fukuda, K. Analysis of Pre-rewetting Heat Transfer (75-WA/HT-33) (A) **Ap 103**; An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
Fuller, D. D. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**
Function Generation
Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**
Fung, Y.-C. On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**
Furuya, Y. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Fused Silica
Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**
Fusible Heat Sinks
A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**
Fusion
A Step to Fusion Feasibility (ES) **My 16**
Fusion Power
Progress Toward Fusion Power (BTR) **My 48**
Fusion Power Reactors
Roadblocks to Fusion (BTR) **D 58**
Fusion Research
Experimental Fusion Device (BTR) **JI 48**
Fusion Research Support (EN) **N 66**
Fusion Temperatures
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**
Fusion Test Reactors
The First Fusion Test Reactor (ES) **Ap 22**

G

Gaal, S. L. The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**
Gage, S. J. Systems Approach to R&D Planning for Energy/Environmental Interface (75-Pwr-2) (A) **Ja 110**
Gain Blocks
Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
Galate, J. W. Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**
Galetuse, S. Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**
Gallagher, R. H. Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**
Galletly, G. D. Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**
Garba, J. A. Dynamic Analysis and Test Results of the Viking Orbiter (75-WA/Aero-7) (A) **My 98**
Gardner, T. N. Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**
Garg, D. P. Technology Assessment and Social Choice: A Policy-Oriented Course (75-WA/TS-2) (A) **Mr 94**
Garrison, P. W. Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**
Gas
Gas vs. Electricity (ES) **Ap 23**
Gas Analyzers
Safe Gas Analyzer (BTR) **JI 50**
Gas Cleaning Systems
Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**
Gas Compressors
Performance of Hydraulic Gas Compressors (76-FE-5) (A) **Ag 94**
Gas Containment
Total Gas Containment System (75-Pet-32) (A) **Ja 116**
Gas-Cooled Reactors
Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**
Gas Droplet Flow
The Particle-Source-In-Cell (PSI-Cell) Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**
Gas Fluidized Beds
Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Gas Fuel Operations
Modern Gas Turbines for Low Btu Gas Fuel Operation (76-GT-117) (A) **Ag 91**
Gas Furnaces
Raising Gas Furnace Efficiency (BTR) **My 57**
Gas Gyro Bearings
Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**
Gas Line Pumpers
Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **JI 91**
Gas Liquid Flow
A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
Gas-Lubricated Bearings
Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**
Gas Lubrication
The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**
Gas Mileage Improvements
Big Boost in Gas Mileage (BTR) **D 56**
Caddy on the Fly (BTR) **S 50**
Gas-Particle Jets
Some Aspects of Gas-Particle Jets in a Cross Flow (75-WA/HT-5) (A) **Ap 99**
Gas Pipelines
Reduction of Gas Turbine Fuel Consumption on Gas Pipelines (76-GT-80) (A) **JI 96**
Gas Production Platforms
Durable Paint Job (BTR) **D 50**
Gas Resources
Results Produced by a Technology Assessment of OCS Oil and Gas Resources (75-WA/TS-6) (A) **Mr 94**
Gas-Solids Flow
Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**
Gas Turbine Catalog
Sawyer's Gas Turbine Catalog 1975 (CB) **JI 100**
Gas Turbine Combustors
A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**
Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**
Gas Turbine Emissions
Gas Turbine Emissions and Performance on Methanol Fuel (75-Pwr-22) (A) **Ja 113**
Gas Turbine Engines
Improved Auto Gas Turbine Engine (BTR) **D 61**
Gas Turbine Generators
100-MW G-T Generator (IF) **Ap 65**
Gas Turbines
The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) (A) **F 82**
Advanced Acoustic Nacelle Concepts (76-GT-35) (A) **JI 90**
Advanced Composite Fan Blade Flight Evaluation Program (76-GT-75) (A) **JI 95**
Advanced Labyrinth Seal Design Performance for High Pressure Ratio Gas Turbines (75-WA/GT-22) (A) **F 83**
Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **JI 87**
Advancements and Application of Programmable Analog Control Technology (76-GT-122) (A) **Ag 92**
Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **JI 98**
Air Inlet Filtration for Gas Turbine Units (76-GT-81) (A) **JI 95**
Alternate Fuels Capability of Gas Turbines in the Process Industry (76-GT-119) (A) **Ag 92**

Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**

Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **JI 93**

An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) (A) **F 82**

The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**

Approximately Calculating Optimum Pressure Ratios for Various Gas Turbine Cycles (76-GT-21) (A) **JI 89**

Assembly and Test of a Direct Reversing Marine Gas Turbine (76-GT-27) (A) **JI 90**

Autoignition Characteristics of Hydrocarbon Fuels at Elevated Temperatures and Pressures (76-GT-3) (A) **JI 87**

An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**

Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **JI 90**

Calculation of the Quasi Three-Dimensional Flow in a Turbomachine Blade Row (76-GT-56) (A) **JI 93**

Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **JI 86**

CFM56 Turbofan Engines-General Electric/SNECMA Cooperative Engineering Development Program (76-GT-78) (A) **JI 95**

A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **JI 94**

Coal-Fired Gas Turbines (BTR) **Je 56**

Coating Technology for the Marine Gas Turbine Airfoil Application (76-GT-111) (A) **Ag 91**

Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **JI 89**

Control of a Gas Turbine HTGR (76-GT-97) (A) **JI 98**

Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**

A Correlation of Nitrogen Oxides Emissions with Gas Turbine Operating Parameters (76-GT-14) (A) **JI 88**

Coupled Bending-Torsion Vibrations of Rotating Blades (76-GT-43) (A) **JI 91**

A Critical Review of NO_x Correlations for Gas Turbine Combustors (75-WA/GT-7) (A) **F 80**

Cycle Analysis of Air-Storage Power Plants (76-GT-41) (A) **JI 91**

Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **JI 94**

Deposits from Heated Gas Turbine Fuels (76-GT-9) (A) **JI 87**

Design of an Annular Channel for Testing Highly Loaded Compressor Blades: Comparison Between Theory and Experiments (76-GT-79) (A) **JI 96**

Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **JI 90**

Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**

Detailed Flow Measurements in a Four Stage Axial Compressor (76-GT-46) (A) **JI 92**

The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **JI 87**

Determination and Probabilistic Foundation Forces Resulting from an Unbalanced Turbine (76-GT-120) (A) **Ag 92**

Development and Design of Directionally Solidified Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **JI 90**

Development of The Nissan YTP-12 Gas Turbine Engine (76-GT-101) (A) **Ag 90**

"Do It Yourself" Maintenance—An On-Site Approach to Lower Costs and Improved Equipment Availability (76-GT-108) (A) **Ag 90**

The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission (75-WA/GT-11) (A) **F 81**

Effect of Maintenance on Gas Turbine Reliability (76-GT-68) (A) **JI 94**

Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **JI 97**

The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **JI 98**

Effects of C and Mf Concentration on the Mechanical Properties of Wrought Superalloys Based on NASA IIB-11 Produced from Prealloyed Powders (76-GT-112) (A) **Ag 91**

Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**

The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **JI 95**

The Effects of Test Procedures on the Interpretation of NO_x Emission Data from a Gas Turbine (75-WA/APC-9) (A) **Je 113**

Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) (A) **F 82**

Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**

Epicyclic Gearing for Gas Turbine Main Propulsion (76-GT-24) (A) **JI 89**

Evaluation of Improved Cycles for Marine Application of An Aircraft Derivative Gas Turbine (76-GT-114) (A) **Ag 91**

An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **JI 88**

Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**

An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **JI 88**

Experimental Evaluation of an Axial-Flow Transonic Compressor (76-GT-34) (A) **JI 90**

An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**

Experimental Verification of Film-Cooling Concepts on a Turbine Vane (75-WA/GT-21) (A) **F 83**

Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) (A) **F 83**

Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **JI 98**

Field Experience with the Pace Control System (76-GT-106) (A) **Ag 90**

Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **JI 96**

Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**

Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**

Film Cooling of Gas Turbine Blades: A Study of the Effect of Large Temperature Differences on Film Cooling Effectiveness (76-GT-2) (A) **JI 86**

Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **JI 96**

Flow Prediction in Axial Flow Compressors Including End-Wall Boundary Layers (76-GT-72) (A) **JI 95**

Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**

Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine (75-WA/Ener-4) (A) **Mr 95**

Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **JI 97**

Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**

Gas Turbine Air Filtration—A Means of Sulfidation Control (76-GT-59) (A) **JI 93**

Gas Turbine Blade Heat Transfer with Rough Surfaces (75-WA/HT-107) (A) **Je 117**

Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**

Gas Turbine Engine Internal Air Systems: A Review of the Requirements and the Problems (75-WA/GT-1) (A) **F 80**

Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**

Gas Turbine Operation in Extreme Cold Climates (76-GT-127) (A) **Ag 93**

Gas Turbines Burning Dirty Fuels (76-GT-66) (A) **JI 94**

Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **JI 93**

Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **JI 96**

Heat Treating of a Lamellar Eutectic Alloy ($\gamma/\gamma' + \delta$) (76-GT-103) (A) **Ag 90**

High Performance Epicyclic Gears for Gas Turbines (76-GT-88) (A) **JI 97**

High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**

A Hybrid Ceramic-Metal Combustion System (76-GT-22) (A) **JI 89**

Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**

Icing Problems—Review of Simulated Ice Ingestion Tests (76-GT-128) (A) **Ag 93**

Improved Specific Fuel Consumption of Open Cycle Gas Turbines by Utilization of Waste Heat (76-GT-45) (A) **JI 92**

Inflight Engine Performance Evaluations (76-GT-70) (A) **JI 95**

On the "In-Situ" Control of Acoustic Liner Attenuation (76-GT-61) (A) **JI 94**

An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **JI 90**

Jet Mixing as Defined by Water Models (75-WA/GT-2) (A) **F 80**

Logistic Support of Aero Derivative Marine Gas Turbines in the Royal Navy (76-GT-44) (A) **JI 92**

Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) (A) **F 81**

Low-and-High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **JI 91**

Lowering Cost of Testing Turbines (BTR) **My 48**

Measurement of Exhaust Emissions from Two J-58 Engines at Simulated Supersonic Cruise Flight Conditions (76-GT-8) (A) **JI 87**

Measurement and Prediction of 3-D Viscous Flows in Low-Aspect-Ratio Turbine Nozzles (76-GT-73) (A) **JI 95**

Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor Stage (76-GT-18) (A) **JI 88**

A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **JI 95**

Microprocessor Based Controls for Gas Turbines (76-GT-91) (A) **JI 97**

Minimizing Assembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **JI 93**

Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **JI 90**

Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (A) **F 80**

Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**

Models for the Representation of Turbomachine Blades During Temperature Transients (76-GT-23) (A) **JI 89**

Modern Gas Turbines for Low Btu Gas Fuel Operation (76-GT-117) (A) **Ag 91**

A Multi-Variable Control for a Turbofan Engine Operating at Sea Level Static (76-GT-71) (A) **JI 95**

Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **JI 97**

A New Approach to the Experimental Study of Turbomachinery Flow Phenomena (76-GT-47) (A) **JI 92**

New Economic Gas Turbine (IF) **F 52**

A New System for Preventing Icing of Gas Turbine Inlets (76-GT-84) (A) **JI 96**

Noise Technology Requirements for Future Aircraft Powerplants (76-GT-69) (A) **JI 95**

A Non-Orthogonal Numerical Method for Solving Transonic Cascade Flows (76-GT-63) (A) **JI 94**

Optical Determination of Rotating Fan Blade Deflections (76-GT-48) (A) **JI 92**

PACE 260 at Comanche, the First Two Years (76-GT-109) (A) **Ag 91**

Packaging of Gas Turbines Type 7 and Type S 7 (76-GT-20) (A) **JI 88**

Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model (75-WA/GT-10) (A) **F 82**

The Potential of Oxide Dispersion Strengthened Superalloys for Advanced Gas Turbines (76-GT-118) (A) **Ag 91**

Powder Metallurgy Processing at High Strength Turbine Disk Alloys (76-GT-96) (A) **JI 98**

Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **JI 95**

Preliminary Thermal Analysis of Air-Storage Gas Turbine

System (75-Pwr-20) (A) **Ja 112**
Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **JI 97**
Problems Associated with Cold Weather Operation of Gas Turbines (76-GT-129) (A) **Ag 93**
Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element Techniques (76-GT-60) (A) **JI 94**
Problems of the Heat Exchanger for Vehicular Gas Turbines (76-GT-105) (A) **Ag 90**
Program Plan for the Design and Spin Test of Ceramic Blade-Metal Disk Attachments (76-GT-37) (A) **JI 91**
Programs to Evaluate Gas Turbine Maintenance and Operating Techniques (76-GT-124) (A) **Ag 92**
Progress in Manufacturing Practices for a Warm-Worked Superalloy (76-GT-110) (A) **Ag 90**
Propulsion Gear Units for Gas Turbine Naval Installations (76-GT-26) (A) **JI 89**
The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **JI 86**
Reaction Rate Determination and Correction for Finite Quenching Rate in Shock Induced Pyrolysis of Methane via a Simple Shock Tube (76-GT-13) (A) **JI 87**
Reduction of Gas Turbine Fuel Consumption on Gas Pipelines (76-GT-80) (A) **JI 96**
The Redundant Omega Clutch—A Marine Propulsion Clutch for Turbines (76-GT-65) (A) **JI 94**
The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **JI 88**
Reversed Fuel Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **JI 96**
Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **JI 93**
Secondary Flows in Compressor Bladings (76-GT-57) (A) **JI 93**
Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**
A Secondary Power Plant for Gas Turbine—HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**
Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Laser Velocimeter (76-GT-49) (A) **JI 92**
A Simple Gas Turbine Combustor NO_x Correlation Including the Effect of Vitiated Air (76-GT-5) (A) **JI 86**
A Simple Method for Supersonic Compressor Cascading Performance Prediction (76-GT-64) (A) **JI 94**
A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **JI 87**
A Simple Variable-Geometry Combustor for the Automotive-Turbine Engine (76-GT-11) (A) **JI 87**
Status Report on Closed-Cycle Power Plants in the Federal Republic of Germany (76-GT-54) (A) **JI 93**
Status Report—Subsonic Aircraft Noise Reduction (76-GT-116) (A) **Ag 91**
Study of Light Weight Turbine Transmission Systems (76-GT-121) (A) **Ag 92**
Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **JI 87**
A Test Program to Provide an Economic Evaluation of Techniques to Control Corrosion in Gas Turbines (76-GT-87) (A) **JI 96**
Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **JI 92**
Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**
Transfer of Heat in Rotating Systems (76-GT-25) (A) **JI 89**
Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **JI 93**
Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **JI 91**
Type 3—Sulzer's New 5-MWe Gas Turbine (76-GT-33) (A) **JI 90**
A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**
The Use of Experimental Interstate Data for Matching the Performance of Axial Compressor Stages Having Variable-Setting-Angle Blade Rows (76-GT-42) (A) **JI 91**
Utility Experience with Regenerative Cycle Combustion Turbines (76-GT-85) (A) **JI 96**
Vaporization of LNG with Closed-Cycle Gas Turbine (76-GT-38) (A) **JI 91**
Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **JI 87**
Water-Cooled Gas Turbines (BTR) **Je 55**
XFV-12A Propulsion System Development (76-GT-125) (A) **Ag 92**

Gas Turbine and Fluids Engineering
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**
Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**
A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**
Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**
Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) (A) **Ag 95**
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**
An Experimental Investigation of Wall Jet-Receiver Interaction (76-FE-18) (A) **Ag 95**
An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A) **Ag 95**
A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**
Flow Distribution Manifolds (76-FE-7) (A) **Ag 94**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**
Losses in Radial Inflow Turbines (76-FE-9) (A) **Ag 94**
A Nearly Three-Dimensional Intrablade Computing System for Turbomachinery—Part I: General Description (76-FE-19) (A) **Ag 96**; Part II: System Details and Additional Examples (76-FE-20) (A) **Ag 96**
Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**
A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**
Performance of Hydraulic Gas Compressors (76-FE-5) (A) **Ag 94**
Prediction of the Trajectory of a Turbulent Jet Injected into a Crossflowing Stream (76-FE-8) (A) **Ag 94**
Quasi-Three-Dimensional Numerical Solution of Flow in Turbomachines (76-FE-23) (A) **Ag 96**
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) (A) **Ag 93**
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Transient Analysis of Air Vessels and Air Inlet Valves (76-FE-28) (A) **S 95**
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**

Gas Wells
Cementing Research in Directional Gas Well Completions (75 Pet 30) (A) **Ja 116**

Gascoyne, J. W. Stress Limits for Class 2 and Class 3 Components Under Upset, Emergency, and Faulted Conditions (76-PVP-61) (A) **D 104**

Gaseous Diffusion Flames
An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**

Gaseous Effluents
Fluidic Velocity Sensor for Gaseous Effluents (75-WA/APC-6) (A) **Je 113**

Gaseous Emissions
Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**

Gaseous Environmental Factors
Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Gaseous Fuel Reactors
Gaseous Nuclear Core Reactor (BTR) **JI 51**

Gaseous Fuels
An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **JI 88**

Gaseous Pollutants
Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**

Gases
Hydrocarbon Fuels: Production, Properties and Performance of Liquids and Gases (CB) **My 109**

Gasification
Gasification of Solid Waste in Fixed Beds **JI 24**
The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**

Gasification Technology
Taking the Lumps Out of Coal (ES) **D 17**

Gaskets
On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**
Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**

Gasoline
Coal-to-Gasoline Process (BTR) **Je 53**

Gasoline Substitute Systems
The Pegasus Unit: Petroleum Gasoline Substitute Systems (CB) **Ap 107**

Gasoline Supply
Gas Stretcher (BTR) **Je 55**

Gasper, A. Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**

Gatzoulis, J. Improved Specific Fuel Consumption of Open Cycle Gas Turbines by Utilization of Waste Heat (76-GT-45) (A) **JI 92**

Gaul, H. P. Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**

Gauntner, J. W. Experimental Verification of Film-Cooling Concepts on a Turbine Vane (75-WA/GT-21) (A) **F 83**

Gdoutos, E. E. Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**

Gear Design
Gear Design and Manufacture Made Easy (CT) **F 64**

Gear Drives
Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**

Gear Pumps
Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) (A) **N 101**

Gear Trains
A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**

Gear Transmissions
Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) (A) **Ja 121**
Efficiency of Discrete Gear Transmissions as a Means of Starting and Accelerating Automotive Vehicles (76-DE-40) (A) **S 92**

Gears
Approximate Calculation of Power Loss in Involute Gears (75-PTG-2) (A) **Ja 114**
Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**
State of Art at Research Level in the Design of Wildhaber-Movikov Circular Arc Gears (76-DET-78) (A) **D 94**
Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**

Gee, S. Closing the Gap Between Research and Practice (76-DET-86) (A) **D 95**

Gell, M. Development and Design of Directionally Solidified Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **JI 90**

Genberg, R. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95; N 36**

Generalized Flow
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**

Genetic Recombination Research
Genetic Juggling (BTR) **D 48**

Gentle, C. R. A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**; Prediction of Ball Motion in High Speed Thrust-Loaded Ball Bearings (76-Lub-1) (A) **Ja 118**

Geometrics
Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Albebraic Loci and Couplings

(76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**

Geometry Constraints
Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**

Geostationary Research Satellite
Two Antennas for ESA (IF) **Ag 57**

Geotechnical Sciences
LNG Development Project (IF) **Ag 57**

Geothermal Energy
Geothermal Energy Needed: Effective Heat Transfer Equipment **Ag 27**
Geothermal Power—The "Sleeper" in the Energy Race **D 25**
Geothermal Power May Trigger Earthquakes (BTR) **F 42**
Study New Power Plant (BTR) **F 43**
Texas Should Get Into Hot Water (ES) **Je 19**

Geothermal Formations
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**

Geothermal Power Generation
Another View of Overview (C) **My 39**

Geothermal Reservoirs
Drilling Mud (BTR) **Jl 51**
The Numerical Simulation of Heat and Mass Transfer in Multi-Dimensional Two-Phase Geothermal Reservoirs (75-WA/HT-71) (A) **My 104**

Gerdeen, J. C. Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

Gerhold, B. W. A Hybrid Ceramic-Metal Combustion System (76-GT-22) (A) **Jl 89**

Gessner, F. B. The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**

Ghai, R. C. Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**

Ghia, K. N. Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**; Axisymmetric Stokes Flow Past Cones Including the Case of the Needle (75-WA/APM-2) (A) **Je 119**

Ghia, U. Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**

Ghose, A. Effect of Magnetic Field on Wear (75-PTG-5) (A) **Ja 114**

Giammar, R. D. The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**

Giannotti, J. G. A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) (A) **Ap 91**

Gibbons, J. H. Sizing a Cooling Pond for a Power Plant (75-WA/HT-63) (A) **My 103**

Gibson, W. C. Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**

Gidaspow, D. Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**

Gilbert, N. Procedure for the Determination of Thermal Stresses in 3-Shell Junctions Common to Pressure Vessel Construction (76-PVP-53) (A) **D 103**

Gill, H. S. Engineering Management—A Challenge in Leadership (76-DE-11) (A) **Ag 100**

Gill, W. State of the Art Review of Sliding Vane Machinery (76-DET-90) (A) **D 96**

Gillespie, G. P. The Mini-Boat: A Life Boat for Helicopter Crewmen (76-ENAs-61) (A) **N 94**

Gillingham, G. R. A New System for Preventing Icing of Gas Turbine Inlets (76-GT-84) (A) **Jl 96**

Gillis, P. P. Heavenly Help for SI (C) **Je 47**

Girkhead, W. G. Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**

Giromill
It Doesn't Look Like a Windmill (ES) **F 15**

Givens, G. R. OILSIM—A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**

Gladden, M. J. Experimental Verification of Film-Cooling Concepts on a Turbine Vane (75-WA/GT-21) (A) **F 83**

Glance, P. M. Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**

Glass Tubular Heat Exchanger
New Glass Tubular Heat Exchangers (BTR) **Je 56**

Glass Honeycomb
Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**

Glassman, H. N. Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**

Gleed, A. R. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**; Methods for Reducing Losses Across Fluid Metering (75-WA/FM-7) (A) **Je 119**

Glenny, D. E. Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model (75-WA/GT-10) (A) **F 82**

Glick, G. L. Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**

Glicksman, L. R. Heat Transfer to Horizontal Tubes in Shallow Fluidized Beds (76-HT-67) (A) **N 89**

Global Energy Crisis
Japan Looks at Wave-Power Generation (BTR) **Ag 51**
Preparing for Global Crisis (C) **N 43**

Global Environment
Simulating Seasonal Changes (NB) **Ag 61**

Global Pollution
Global Pollution Control Demands Rising (NB) **S 68**
Hothouse Earth (CB) **F 89**

Glue
What's New in Glue (NB) **D 72**

Glycerine
Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**

Gmelin Handbook
Gmelin Handbuch der Anorganischen Chemie (CB) **My 108**

Goel, R. P. On the Creep Rupture of a Tube and a Sphere (75-WA/APM-4) (A) **Je 119**; Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) (A) **F 87**

Goldbrunner, P. R. Air Inlet Filtration for Gas Turbine Units (76-GT-81) (A) **Jl 95**

Gold Extraction
Improving Gold Extraction (BTR) **O 58**

Gold Film
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**

Golden, L. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**

Goldstein, J. K. Cooling Methods for Aircraft Electronics Equipment (76-ENAs-51) (A) **N 92**

Golebiewski, E. P. Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) (A) **N 98**

Golf Clubs
Cheaper Golf Club Heads (IF) **Ja 50**

Golf Drive
Maximizing Distance of the Golf Drive: An Optimal Control Study (75-WA/Aut-12) (A) **Ap 94**

Gonzalez, J. I. SPRINT I Environmental Control (76-ENAs-27) (A) **O 93**

Gooch, P. W. Fluidic Velocity Sensor for Gaseous Effluents (75-WA/APC-6) (A) **Je 113**

Goodger, E. M. *(author)* Hydrocarbon Fuels: Production, Properties and Performance of Liquids and Gases (CB) **My 109**

Goodson, R. E. Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**

Goodwin, G. M. Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**

Gordon, J. C., Jr. Engineering Ethics (C) **Mr 42**

Gordon, J. L. Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Gordon, R. L. *(author)* U.S. Coal and The Electric Power Industry (CB) **Je 123**

Gorman, J. E. *(author)* Simplified Guide to Construction Management for Architects and Engineers (CB) **S 103**

Gorton, C. A. Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**

Gorzegno, W. P. Modifications to Ormond Beach Steam Generators for NO_x Compliance (75-WA/Pwr-9) (A) **F 86**

Goss, W. P. Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**

Gosman, A. D. The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes: I-Laminar Flow (75-WA/HT-109) (A) **Je 117**; Transfer of Heat in Rotating Systems (76-GT-25) (A) **Jl 89**

Gostelow, J. P. A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **Jl 94**; A New Approach to the Experimental Study of Turbomachinery Flow Phenomena (76-GT-47) (A) **Jl 92**

Goto, T. Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**

Gotoh, M. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-15) (A) **Mr 102**

Government Intern Program
Larry and Randy go to Washington **Jl 78**

Government Legislation
A Legislative Potpourri (WW) **Ag 68**

Government Organizations
Measuring and Enhancing the Productivity of Service and Government Organizations (CB) **Je 123**

Government Periodicals
U.S. Government Scientific and Technical Periodicals (CB) **Ag 104**

Grabkowski, S. E. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**

Graduate Degrees
Loan Fund for Women in Graduate Degree Programs (EN) **Ap 72**
Record Number of Degrees Awarded at Polytechnic (EN) **Ag 65**

Graduate Traineeships
Energy-Related Graduate Traineeships (EN) **Je 81**

Gross, R. J. An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**

Graff, W. J. Re-analysis of Cruciform Specimen Fatigue Results by Statistical Methods (75-Pet-46) (A) **Ja 118**

Grafleo, A. J. Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**

Graham, J. The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors (75-WA/NE-7) (A) **F 79**

Graham, D. A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) (A) **Ap 95**

Graham, J. S. Effects of Spindle Centering on Ring-Spinning Tension (76-Tex-2) (A) **N 95**

Grants
Grants: How to Find Out About Them and What To Do Next (CB) **Mr 108**

Granular Materials Flow
Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**

Granulocyte Procurement
System Aids Leukemia Victims (BTR) **Ja 39**

Graphical Construction
Elimination of the Branch Problem in Graphical Burmester Mechanism for Four Finitely Separated Positions (75-WA/DE-23) (A) **Mr 106**

Graphical Solutions
Graphical Solution of the Branch and Order Problems of Linkage Synthesis for Multiply Separated Positions (76-DET-16) (A) **N 98**

Graphics
A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **D 94**

Graphite
Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**

Graphite-Epoxy Composites
Making Better Musical Instruments from Graphite Composites **Mr 25**

Gravel Packing
Techniques for Gravel Packing Abnormally Pressured Unconsolidated Reservoirs (75-Pet-37) (A) **Ja 117**

Graves, R. L. Emissions from an Ammonia-Fueled Spark Ignition Engine (75-WA/DGP-2) (A) **F 84**

Gravest Frequency
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) (A) **O 104**
Gravity Fractions
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**
Gravity Structures
The Gravity Structure: Its Merits and Economics (75-WA/OcE-9) (A) **Ap 91**
Gray, A. M. Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**
Gray, S. The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**
Grease Separation
Grease Separation Under Centrifugal Forces (75-PTG-3) (A) **Ja 114**
Greber, I. Some Experiments on Laminar Wall Jets (75-WA/Flcs-7) (A) **Je 115**
Green, B. D. Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**
Green, M. R. Elections to Fellow Grade **D 90**
Greenfield, L. P. An Investigation of Container Flat Car Ride Quality (75-WA/RT-7) (A) **F 78**
Greenough, B. M. Electrolytic Urine Pretreatment (76-ENAs-19) (A) **O 95**
Greenwald, S. Business and Industry Courses for Academic Credit **Jl 67**
Greenwald, S. M. Professional Development—Pulling It Together **Ap 40**
Greenwich Observatory
Tercentenary of the Greenwich Observatory (BTR) **Je 51**
Greer, J. B. An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**
Greif, R. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**; Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (75-WA/HT-56) (A) **My 102**
Greitzer, E. M. The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **Jl 88**
Griepentrog, H. Vaporization of LNG with Closed-Cycle Gas Turbine (76-GT-38) (A) **Jl 91**
Griffith, P. A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**
Grinding Performance
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**; Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**
Grobner, P. J. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**
Grondahl, C. M. A Hybrid Ceramic-Metal Combustion System (76-GT-22) (A) **Jl 89**
Groover, M. P. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**
Groschup, G. Status Report on Closed-Cycle Power Plants in the Federal Republic of Germany (76-GT-54) (A) **Jl 93**
Gross Motion Analysis
Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**
Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**
Ground Temperature Regime
The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
Gilpin, R. R. The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
Ground Vehicles
Fluidically Controlled Active Suspension Systems for High Speed Ground Vehicles (75-WA/Flcs-6) (A) **Je 115**
Ground Vibration Tests
Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**
Group Technology
The Introduction of Group Technology (CB) **F 88**
Groves, D. G. Brittle Materials (C) **Ja 36**
Growth Characteristics
Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**
Gruber, J. M. Elections to Fellow Grade **My 91**
Gu, A. Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**; Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**
Gubbels, M. H. Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**
Guber, F. H., Jr. Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
Gubser, J. L. Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**
Guenther, D. A. Product Liability: The Engineer in Court **Jl 20**; Product Liability and the Mechanical Engineer (75-WA/SAF-1) (A) **Je 117**
Guerrero, H. N. Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**
Guggenheim, S. F. Instrument Contact Spring Design Considerations (76-DE-44) (A) **S 93**
Guideway Irregularities
Analytical Models for Certain Guideway Irregularities (75-WA/Aut-11) (A) **Ap 94**
Gun Components
Application of a Finite Element Computer Program for Studying Failures and Affecting Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**
Gunter, E. J. Short Bearing Analysis Applied to Rotor Dynamics, Part 1: Theory (75-Lub-30) (A) **Ja 121**; Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**
Gupta, B. K. Symmetrical Laminar Channel Flow with Wall Suction (75-WA/FE-6) (A) **Je 108**
Gupta, B. P. Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**; Simulation of Solar Heated Buildings (75-WA/Sol-10) (A) **Mr 93**
Gupta, C. P. Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**; Entropy and Availability Function Values of Saturated Ammonia-Water Mixtures (75-WA/PID-2) (A) **My 96**
Gupta, G. D. Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**
Gupta, K. C. Design of Four-Bar Function Generators With Mini-Max Transmission Angle (76-DET-8) (A) **N 97**
Gupta, P. K. On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) (A) **Ja 120**
Gupta, S. K. Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**
Gustafson, B. A. A Simple Method for Supersonic Compressor Cascading Performance Prediction (76-GT-64) (A) **Jl 94**
Gust Torques
Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**
Guthrie, L. Choice of Honeycomb Cell Size for Best Efficiency of a Flat-Plate Solar Collector (76-HT-42) (A) **O 102**
Gutmann, F. T. Metricomment (C) **My 43**
Guymer, C. Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**
Gwaltney, R. C. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**

H

Haas, S. A. Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**
Haber, C. P. Engineers' Salaries (C) **Mr 45**
Haberstroh, R. D. Heat Transfer by Contact Between Agitated Particles (76-HT-61) (A) **N 88**
Hageniers, O. L. A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**
Hahn, W. C., Jr. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
Hai, S. M. Dynamic Pressure Exchanger Performance Estimates (75-Pwr-1) (A) **Ja 110**; Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) (A) **S 99**
Haid, D. A. Power Transmission via the Superconducting Cable **Ja 20**
Haines, D. W. Making Better Musical Instruments from Graphite Composites **Mr 25**; Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**
Haji-Sheikh, A. Onset of Separation in Film Cooling Following a Slot (75-WA/HT-16) (A) **Ap 101**
Halasz, S. Protesting Dual Units (C) **Ja 34**
Halasz, S. T. Instrument Contact Spring Design Considerations (76-DE-44) (A **S 93**
Hale, M. E. The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) (A) **My 95**
Half Planes
An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**
Half Space
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) (A) **S 100**
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**
Halford, G. R. Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**
Halfpenny, P. F. Aircraft Environmental Control Problems as a Result of Air Contamination (76-ENAs-13) (A) **O 94**
Hall, A. J. *(author)* The Standard Handbook of Textiles (CB) **F 88**
Hall, A. S., Jr. A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**
Hall, J. Reaction Rate Determination and Correction for Finite Quenching Rate in Shock Induced Pyrolysis of Methane via a Simple Shock Tube (76-GT-13) (A) **Jl 87**
Hall, R. E. The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**; Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**
Halogenated Hydrocarbons
Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**
Ham, I. Effects of Built-Up Edge in Drilling (75-WA/Prod-17) (A) **Mr 102**
Hamed, A. Losses in Radial Inflow Turbines (76-FE-9) (A) **Ag 94**
Hammerand, D. J. Poll Proposed (C) **Jl 42**
Hamrock, B. J. Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 1—Theoretical Formulation (75-Lub-11) (A) **Ja 119**, Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**
Handhold/Equipment Mount
Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**
Haneke, R. L. The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**
Hanson, K. A. Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**
Hardening
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**
Hardware Standards
LMFBR Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**

Harman, C. M. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**

Harmonic Cam Motions
An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions (75-WA/DE-11) (A) **F 87**

Harmonic Waves
Harmonic Waves in Layered Composites: Comparison Among Several Schemes (75-WA/APM-19) (A) **Je 120**
Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

Har-Oz, P. H. Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Harpel, W. L. Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**

Harper, J. M. Heat Transfer by Contact Between Agitated Particles (76-HT-61) (A) **N 88**

Harpoon Missile
Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**

Harris, A. B. Shape Up or Ship Out (C) **My 43**

Harris, D. B. Particle Measurements for Textile Airborne Process Waste Control (76-Tex-9) (A) **N 96**

Harris, L. R. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**

Harrison, H. D. An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**

Harsha, P. T. Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**

Hart, F. D. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) (A) **Ja 125**

Hartman, G. J. Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**

Hartman, P. J. Current Profile Energy and Ocean Moorings (75-WA/OcE-5) (A) **Ap 91**

Hartnett, J. P. (editor) Steam and Air Tables in SI Units Including Data for Other Substances and a Separate Mollier Chart for Steam (CB) **My 108**

Hartnett, M. J. Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Harvey, D. W. Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**

Hashemi, A. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**

Hattori, T. Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **JI 96**

Haugen, E. B. Uses of Statistics in Product Testing and Evaluation (76-DE-25) (A) **S 91**

Hawley, R. H. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Hayakawa, T. Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**

Hayami, H. An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**

Hazardous Facilities
Using RMS Techniques for Designing RMS and Operating Hazardous Facilities **N 21**

H-Bomb
Energy Conversion Conference Hears of a Peaceful Use for the H-Bomb (NR) **N 58**

Head Injury Models
The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**

Header Stubs
The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**

Health
The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) (A) **Ap 96**

Health Care Systems
The Role of Shuttle in Health Care Systems Development for Space Stations (76-ENAs-29) (A) **O 96**

Heap, M. P. The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**

Healy, M. J. A Computer Method for Calculating Dynamic Responses of Nonlinear Flexible Rail Vehicles (76-RT-5) (A) **S 94**

Heard, T. C. Reduction of Gas Turbine Fuel Consumption on Gas Pipelines (76-GT-80) (A) **JI 96**

Hearing Damage
Recognition and Reduction of Hearing Damage Risk During Farm Operations (75-WA/SAF-3) (A) **Je 117**

Hearsey, R. M. A Nearly Three-Dimensional Intrablade Computing System for Turbomachinery—Part I: General Description (76-FE-19) (A) **Ag 96**; Part II: System Details and Additional Examples (76-FE-20) (A) **Ag 96**

Heart Pumps
The Design and Development of a Magnetic Heart Pump (75-WA/Bio-9) (A) **Mr 100**
The Magnetic Heart Pump Challenge **Je 36**

Heat
Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**

Heat Conduction
Accuracy, Stability, and Oscillation Characteristics of Transient Two-Dimensional Heat Conduction (75-WA/HT-85) (A) **My 106**
Criteria for Comparison of Methods of Solution of the Inverse Heat Conduction Problem (75-WA/HT-82) (A) **My 106**
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (75-WA/HT-95) (A) **My 107**
Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**
A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 106**
Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method (75-WA/HT-81) (A) **My 105**
Quasi-Coupling—An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**
Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**
Unsteady Heat Conduction in Variable Conductivity Soils (75-WA/HT-89) (A) **My 106**

Heat Exchanger Augmentation
Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**

Heat Exchanger Tubes
Structural Characteristics of Helical-Corrugated Heat Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**

Heat Exchangers
Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**
Closed Form Design Solutions for Box Type Heat Exchangers (75-WA/DE-15) (A) **Mr 106**
Computer-Aided Design Analysis and Selection of Heat Exchanger with Phase-Changing Media (75-WA/PID-5) (A) **My 97**
Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants (75-Pwr-15) (A) **Ja 112**
Design of Particulate Direct Contact Heat Exchanger: Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**
Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **JI 93**
Heat Exchangers for High Temperature Thermodynamic Cycles (75-WA/HT-102) (A) **Je 116**
Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**
Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**
New Glass Tubular Heat Exchangers (BTR) **Je 56**
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**; Part 2—Heat Transfer and Flow Friction Characteristics (75-WA/HT-9) (A) **Ap 100**
Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**
Problems of the Heat Exchanger for Vehicular Gas Turbines (76-GT-105) (A) **Ag 90**
Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**

Heat Flux
Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**
Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**
A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**
Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Heat Flux Measurement
Optimum Sensor Location in Transient Calorimeters (76-HT-63) (A) **N 89**

Heat Flux Sensors
Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**

Heat Losses
"Heat Pictures" for Energy Study (BTR) **O 57**

Heat Pipes
Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Decks (76-ENAs-25) (A) **O 95**
The Heat Pipe—A Survey (76-DET-84) (A) **D 95**
Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**
Waste Heat Utilization Through the Use of Heat Pipes (75-WA/HT-48) (A) **My 101**

Heat Pumps
Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**
Solar Energy for Space Heating with Heat Pump **O 33**

Heat Recovery
Heat Recovery at G.M. (ES) **Ag 19**
A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications (75-Pwr-30) (A) **Ja 114**
Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**

Heat Rejection Module
Development Testing of a Self-Contained Heat Rejection Module (76-ENAs-33) (A) **O 96**

Heat Shields
Space Shuttle's Heat Shield (BTR) **N 44**

Heat Sink Systems
Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**

Heat Sinks
An Analytical Study of Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**
A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**
A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**
Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**

Heat Sources
A Salty Heat Sink (ES) **Ja 10**

Heat Storage Systems
Low Cost Solar Augmented Heat Pump System for Residential Heating and Cooling (75-WA/Sol-7) (A) **Mr 92**

Heat Tracing
New Method for Heat Tracing Pipelines (ES) **Je 19**

Heat Transfer
Accuracy, Stability, and Oscillation Characteristics of Transient Two-Dimensional Heat Conduction (75-WA/HT-85) (A) **My 106**
Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **JI 98**
Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**
Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**
Analysis of Large Dry Cooling Towers with Spine-Fin Heat Exchange Elements (75-WA/HT-46) (A) **My 100**
Analysis of Pre-rewetting Heat Transfer (75-WA/HT-33) (A) **Ap 103**

An Analytical Study of a Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**
The Characteristics of Thermal Plumes (75-WA/HT-64) (A) **My 103**
Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-W/HT-47) (A) **My 101**
COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**
On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients (75-WA/HT-53) (A) **My 101**
Counter-Flow Evaporative Cooling Tower Performance Modeling and Verification (75-WA/HT-43) (A) **My 100**
Craters Produced by High Power Density Lasers (75-WA/HT-49) (A) **My 101**
Criteria for Comparison of Methods of Solution of the Inverse Heat Conduction Problem (75-WA/HT-82) (A) **My 106**
Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**
The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**
Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**
Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**
Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**
Experimental and Analytical Study of Axial Turbulent Flows in an Inferior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**
An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**
An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**
An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
Evaluation of Fuel Rod Cladding Strength in Steady and Non-Steady Reactor Operation (75-WA/HT-74) (A) **My 104**
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (75-WA/HT-95) (A) **My 107**
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**
Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**
Free Convection Along a Non-Isothermal Vertical Flat Plate (75-WA/HT-15) (A) **Ap 100**
Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**
Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**
Gas Turbine Blade Heat Transfer with Rough Surfaces (75-WA/HT-107) (A) **Je 117**
The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
Heat Exchangers for High Temperature Thermodynamic Cycles (75-WA/HT-102) (A) **Je 116**
Heat and Mass Transfer from Freely Falling Drops (75-WA/HT-37) (A) **Ap 103**
A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**
Heat Transfer Characteristics of an Impinging Jet in a Crossflow (75-WA/HT-100) (A) **Je 116**
Heat Transfer in a Corona Discharge **O 44**; (C) **D 47**
Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**
Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **Jl 96**
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**
Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**
Heat Transfer from Inflatable Structures (75-WA/HT-97) (A) **Je 116**
Heat Transfer from Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) (A) **My 102**
Impact of Fuel Rod Design on the Loss-of-Coolant Accident Analysis (75-WA/HT-80) (A) **My 105**
Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**
Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**
An Investigation of Momentum and Heat Transport in Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) (A) **Ap 99**
Laser Beam-Atmospheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**
LMFBR Steam Generator Areas Requiring Special Attention (75-WA/HT-104) (A) **Je 116**
Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**
Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**
Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**
Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**
A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**
Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**
Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR (75-WA/HT-44) (A) **My 101**
Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**
The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**
Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**
A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 106**
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**
A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**
Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**
The Numerical Simulation of Heat and Mass Transfer in Multi-Dimensional Two-Phase Geothermal Reservoirs (75-WA/HT-71) (A) **My 104**
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**
Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method (75-WA/HT-81) (A) **My 105**
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**
Onset of Separation in Film Cooling Following a Slot (75-WA/HT-16) (A) **Ap 101**
OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**
The Particle-Source-in-Cell (PSI-Cell) Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**; Part 2—Heat Transfer and Flow Friction Characteristics (75-WA/HT-9) (A) **Ap 100**
Performance Analysis of PWR Power Ramp Tests (75-WA/HT-68) (A) **My 103**
Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**
A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**
Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes: I-Laminar Flow (75-WA/HT-109) (A) **Je 117**
Preliminary Analysis of Heat Pipe Heat Exchangers for Heat Recovery (75-WA/HT-36) (A) **Ap 103**
Quasi-Coupling—An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**
A Secondary Power Plant for Gas Turbine—HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**
Simulation and Field Observation of Heated Discharge Dispersion Patterns (75-WA/HT-61) (A) **My 103**
Sizing a Cooling Pond for a Power Plant (75-WA/HT-63) (A) **My 103**
Some Aspects of Gas-Particle Jets in a Cross Flow (75-WA/HT-5) (A) **Ap 99**
Some Heat Transfer Performance Criteria for High Temperature Fluid Systems (75-WA/HT-103) (A) **Je 116**
Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup (75-WA/HT-30) (A) **Ap 103**
Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**
The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**
The Surface Heat Balance in Simulations of Permafrost Behavior (75-WA/HT-86) (A) **My 105**
Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) (A) **My 104**
Thermal/Hydraulic Design Considerations for Clinch River Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**
Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78) (A) **My 105**
Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**
Transfer of Heat in Rotating Systems (76-GT-25) (A) **Jl 89**
Transient Behavior of a Volume-Heated Boiling Pool (75-WA/HT-31) (A) **Ap 103**
Transient Heat Conduction in the Linear Acceleration Target Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**
Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (75-WA/HT-56) (A) **My 102**
Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**
Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**
Unsteady Heat Conduction in Variable Conductivity Soils (75-WA/HT-89) (A) **My 106**
Vibratory Wear of Fuel Rods (75-WA/HT-79) (A) **My 105**
Waste Heat Utilization Through the Use of Heat Pipes (75-WA/HT-48) (A) **My 101**

Heat Transfer Analysis

Heat Transfer Analysis of a Cavity-Type Solar Radiometer (75-WA/Sol-2) (A) **Mr 92**

Heat Transfer Conference
Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**
Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**
Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**
Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**
Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Bubble Control in Gas Fluidized Beds with Applied Electric Fields (76-HT-69) (A) **N 89**
Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
On Calculation of Heat and Mass Transfer in Jet Type Direct Contact Heaters (76-HT-21) (A) **O 100**
Choice of Honeycomb Cell Size for Best Efficiency of a Flat-Plate Solar Collector (76-HT-42) (A) **O 102**
Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**
Combined Radiation-Convection for a Real Gas (76-HT-58) (A) **O 104**
Convection in an Enclosure-Source and Sink Located Along a Single Horizontal Boundary (76-HT-22) (A) **O 100**
Design and Experimental Evaluation of a V-groove Solar Collector (76-HT-53) (A) **O 104**
Design of Particulate Direct Contact Heat Exchanger: Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**
Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**
Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**
Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**
The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**
The Effectiveness of Combined Tangential and Normal Film-Cooling Slots with Finite Lip (76-HT-30) (A) **O 101**
The Effectiveness of Two-Dimensional Film-Cooling Over Curved Surfaces (76-HT-31) (A) **O 102**
Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**
Evaluation of Unsteady State Conduction Heat Transfer by a Noniterative Finite-Difference Method (76-HT-72) (A) **N 90**
Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**
Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**
Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**
Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**
Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**
Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**
Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**
Heat Transfer by Contact Between Agitated Particles (76-HT-61) (A) **N 88**
Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Heat Transfer to Horizontal Tubes in Shallow Fluidized Beds (76-HT-67) (A) **N 89**
Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**
Heat Transfer to Tubes in Fluidized Beds (76-HT-75) (A) **N 90**
Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**
Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**
An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**
Intrinsic Thermocouple Measurement Errors (76-HT-65) (A) **N 89**
Large Amplitude Cellular Convection (76-HT-32) (A) **O 101**
A Method of Simulating the Performances of a Pebble Bed Thermal Energy Storage and Recovery System (76-HT-73) (A) **N 90**
A Miniature Thermal Conductivity Probe for Foods (76-HT-60) (A) **N 88**
The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**
Natural Convection Heat Transfer from Horizontal Tube Bundles (76-HT-35) (A) **O 102**
Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**
A New Differential Formulation of Radiative Transfer and Its Application to the One-Dimensional Problem (76-HT-49) (A) **O 103**
Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**
The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**
Numerical Simulation of the Effect of Climatic Conditions on Heat Transfer from a Building (76-HT-71) (A) **N 90**
Numerical Studies of Diffusively Induced Convection in a Tilted Square Cavity (76-HT-47) (A) **O 103**
Numerical Study of Some Three-Dimensional Laminar Free-Convective Flows (76-HT-34) (A) **O 101**
The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**
Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**
Optimum Sensor Location in Transient Calorimeters (76-HT-63) (A) **N 89**
Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**
Prediction of Film-Cooling Effectiveness in an Unsteady Turbulent Boundary Layer (76-HT-28) (A) **O 101**
Prediction of Temperature Properties in Fluid Bed Boilers (76-HT-66) (A) **N 89**
Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**
Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**
A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**
Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**
Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**
Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) (A) **O 98**
Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**
Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**
Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**
Heat Transfer Equipment
Geothermal Energy Needed: Effective Heat Transfer Equipment **Ag 27**
Heat Treating
Heat Treating of a Lamellar Eutectic Alloy ($\gamma/\gamma' + \delta$) (76-GT-103) (A) **Ag 90**
Heated Jets
Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) (A) **My 96**
Heated Plates
The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**
Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**
Heated Tubes
Natural Convection Heat Transfer from Horizontal Tube Bundles (76-HT-35) (A) **O 102**
Heaters
On Calculation of Heat and Mass Transfer in Jet Type Direct Contact Heaters (76-HT-21) (A) **O 100**
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
Heating
Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Solar Heating and Cooling: Engineering, Practical Design, and Economics (CB) **Ap 107**
Heatshield Sizing
Heatshield Sizing for Erosive Environments (76-ENAs-36) (A) **O 97**
Heave Mode Dynamics
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**
Heavy Construction Costs
Heavy Construction Cost File: Unit Prices (CB) **Jl 101**
Heavy Water Plants
Canadian Heavy Water Plant (BTR) **O 55**
Rehabilitation of the Towers and Vessels of the Glace Bay Heavy Water Plant (76-PVP-68) (A) **D 105**
Heckman, T. P. Nuclear Reactions (C) **Ap 48**
Hechmer, J. R. Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**
Heck, R. Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **Jl 86**
Heck, R. M. CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**
Heckenkamp, M. J. New Directions for Adhesive Usage (76-DE-15) (A) **S 90**
Heckmann, S. R. Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**
Hedrick, J. K. The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**
Heiner, W. J. Alternate Fuels Capability of Gas Turbines in the Process Industry (76-GT-119) (A) **Ag 92**
Heggie, W. S. The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**
Heiserman, D. L. *(author)* Build Your Own Working Robot (CB) **S 103**
Held, G. Proven Operational Performance of Low-Speed Two-Stroke Crosshead Engines in Marine Service (76-DGP-11) (A) **Ag 98**
Helical-Corrugated Tubes
Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**
Helical Gears
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**
Helical Springs
Radial Expansion of Impacted Helical Springs (75-WA/APM-25) (A) **Jl 98**
Role of the Programmable Pocket Calculator in Machine

Design with Helical Spring Examples (76-DET-101) (A) **D 96**

Helices
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**

Helicopter Crewmen
The Mini-Boat: A Life Boat for Helicopter Crewmen (76-ENAs-61) (A) **N 94**

Helicopter Transmissions
Incipient Failure Detection in CH-47 Helicopter Transmissions (75-WA/DE-16) (A) **Mr 105**

Helium Turbines
Small Reactors + Helium Turbines = Near-Term Energy Savings **S 45**

Helmets
Mine Rescue Team Helmet (76-ENAs-69) (A) **N 95**

Hemodynamic Flow
Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**

Henderson, R. E. The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **JI 88**

Henke, R. A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **D 94**

Henry, R. E. SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**

Hepper, J. Propulsion Gear Units for Gas Turbine Naval Installations (76-GT-26) (A) **JI 89**

Heppner, D. B. Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**

Herbert, R. G. Shape and Frequency Composition of Pulses From an Impact Pair (76-DET-36) (A) **N 100**

Herrin, J. Reaction Rate Determination and Correction for Finite Quenching Rate in Shock Induced Pyrolysis of Methane via a Simple Shock Tube (76-GT-13) (A) **JI 87**

Herrmann, G. Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**; The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) (A) **S 98**

Hersh, S. The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**

Hersh, S. P. Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**

Hershkowitz, E. R. Mail on Chauvinism (C) **Je 47**

Herter, R. Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**

Hertzberg, R. W. *(author)* Deformation and Fracture Mechanics of Engineering Materials (CB) **D 107**

Hetiche, L. R. Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Heuristic Algorithms
Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms Part 1: Theory (76-DET-24) (A) **N 99**, Part 2: Applications (76-DET-25) (A) **N 99**

Heymann, F. J. Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**

Hibner, D. H. Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **JI 93**

Hickman, W. H. Investigation of the Properties of the Annubar, A Flow Measurement Probe (75-WA/FM-2) (A) **Je 118**

Hickok, F. *(author)* Handbook of Solar and Wind Energy (CB) **F 89**

Highway Bridge Decks
Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Decks (76-ENAs-25) (A) **O 95**

Hill, K. W. Effect of a Rod Bundle Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**

Hill, W. E. Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**

Himebaugh, W. D. New Cabin Pressure Control System for DC-9 Aircraft (76-ENAs-3) (A) **O 92**

Hincks, H. F. Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Hinton, B. M. Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**

Hiranprueck, T. The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**

Hirata, M. Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**

Hirata, Y. Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **JI 93**

Hirsch, Ch. A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**; Flow Prediction in Axial Flow Compressors Including End-Wall Boundary Layers (76-GT-72) (A) **JI 95**; Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor (76-GT-18) (A) **JI 88**

Hirschfeld, F. Of Blanchard's Balloon and Washington's Passport **Ag 20**; Desalination—circa 1790 **Je 20**; Engineering in the New Nation **My 18**; Geothermal Power—The "Sleeper" in the Energy Race **D 25**; The Growing Market for Commercial Submarines **O 28**; Linking the Nation by Water and Rail **S 20**; Paul Revere Rides Again! **JI 18**; Speaking Out—The ME in the Environmental Revolution **N 18**; Submarine Warfare: General Washington's Secret Weapon **D 18**; The Ups and Downs of Eli Whitney **O 26**

Hitlin, R. A. Who Wants What? ASME Member Survey Finds Out **S 38**

Hoare, R. G. Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**

Hobbs, M. M. Field Experience with the Pace Control System (76-GT-106) (A) **Ag 90**

Hodges, J. L. Prediction of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**

Hodges, R. N. An Investigation of Container Flat Car Ride Quality (75-WA/RT-7) (A) **F 78**

Hodgson, J. W. Emissions from an Ammonia-Fueled Spark Ignition Engine (75-WA/DGP-2) (A) **F 84**

Hodulak, L. Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**

Hoercher, H. A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**

Hoffman, A. H. The Worcester Water Quality Study: A Joint Venture in Community Service (75-WA/TS-7) (A) **Mr 95**

Hoffman, K. C. A Methodology of Technology Analysis with Application to Energy Assessment (75-WA/TS-8) (A) **Mr 94**

Hoffman, M. A. Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**

Hoke, R. C. Prediction of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**

Holcomb, R. S. Flow Visualization Studies of a Fluidized Bed Furnace for a Coal-Fired Closed Cycle Gas Turbine (75-WA/Ener-4) (A) **Mr 95**

Hold-Time Effects
Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**

Holdeman, J. D. Measurement of Exhaust Emissions from Two J-58 Engines at Simulated Supersonic Cruise Flight Conditions (76-GT-8) (A) **JI 87**

Holding Facilities
Conceptual Design of a Biological Specimen Holding Facility (76-ENAs-30) (A) **O 96**
The Development of a Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**

Hollander, J. M. *(editor)* Annual Review of Energy (CB) **N 104**

Hollands, K. G. T. Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**

Holloway, G. A. Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**

Hollworth, B. R. Heat Transfer Characteristics of an Impinging Jet in a Crossflow (75-WA/HT-100) (A) **Je 116**

Holman, F. F. Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**

Holmes, E. F. A Mature Bosch CO Reduction Technology (76-ENAs-14) (A) **O 95**

Holmes, R. E. Heat Transfer in a Corona Discharge **O 44**; Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**

Holography
Laser Beams Prevent Fraud (IF) **N 56**

Holzhausen, G. Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**

Home Heating
Energy Economy in Home Heating (BTR) **Ap 52**

Honeycombs
Choice of Honeycomb Cell Size for Best Efficiency of a Flat-Plate Solar Collector (76-HT-42) (A) **O 102**
Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**
Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**

Hooper, R. M. Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **JI 92**

Hoppe, N. COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**

Horigome, T. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Horizontal Aspect Ratio
Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**

Horizontal Boundaries
Convection in an Enclosure-Source and Sink Located Along a Single Horizontal Boundary (76-HT-22) (A) **O 100**

Horizontal Cylinders
Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**

Horizontal Layers
The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**

Horizontal Pipes
An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**

Horizontal Surfaces
Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**

Horizontal Tubes
Heat Transfer to Horizontal Tubes in Shallow Fluidized Beds (76-HT-67) (A) **N 89**
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**

Horlock, J. H. The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **JI 88**

Hostile Mortars
Pinpoints Hostile Mortars (BTR) **Ja 40**

Hot Forgings
Blazing New Trails in Hot-Forging (BTR) **JI 45**

Hot Wire Data
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**

Hot Wire Instrumentation
Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor Stage (76-GT-18) (A) **JI 88**

Hough, G. W. *(author)* Technology Diffusion: Federal Programs and Procedures (CB) **JI 100**

Household Appliances
Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**

Houtman, J. L. Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) (A) **Mr 104**

Howard, J. H. G. A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**

Howell, H. R. The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**

Howell, J. R. Choice of Honeycomb Cell Size for Best Efficiency of a Flat-Plate Solar Collector (76-HT-42) (A) **O 102**

Howells, R. Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**

Howes, M. A. H. Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**; Part 2: (75-Lub-44) (A) **Ja 124**

Hoyt, D. O. Effective Role of Trade Magazines in Design

Technology Transfer (76-DET-106) (A) **D 97**

Hrialwa, Y. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**

Hrovat, D. Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**

Hrycak, P. Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**

Hsieh, C. K. The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**

Hsieh, T. C. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**

Hsu, C. S. Behavior of Dynamic Systems Governed by a Simple Nonlinear Difference Equation (75-WA/APM-21) (A) **Je 121**

Hsu, S.-T. Transient Analysis of Air Vessels and Air Inlet Valves (76-FE-28) (A) **S 95**

Hsu, T. R. On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**; Application of Finite Element Technique to the Design Technology Transfer (76-DET-74) (A) **D 94**

Hsu, Y. W. Effect of Nonuniform Residual Bending Stresses on Postleveled Sheet Flatness (75-WA/Prod-2) (A) **Mr 100**

Huang, L. M. The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**

Huang, N. C. Creep Buckling of Imperfect Columns (76-APM-10) (A) **S 99**; On the Extension of Elastic Two-Ply Filament Yarns (75-WA/APM-15) (A) **Je 120**

Huang, S. Y. Preliminary Thermal Analysis of Air-Storage Gas Turbine System (75-Pwr-20) (A) **Ja 112**

Hubbard, M. Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**

Hubbard, F. R. Single Tube and Rod Bundle Blowdown Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Hubert, L. Brief Survey of Spring Design Nomographs (76-DET-77) (A) **D 94**

Huffaker, D. C. Educating the Engineer (C) **My 40**

Hughes, E. D. Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**

Hullender, D. A. Analytical Models for Certain Guideway Irregularities (75-WA/Aut-11) (A) **Ap 94**

Human Blood
A Constitutive Equation for Whole Human Blood (75-WA/Bio-12) (A) **Mr 100**

Human Capital Formation
The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**

Human-Engineered Systems
KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**

Human Joint Motion
A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**

Human Models
A Human Model for Measuring Ride Quality **Jl 30**

Human Risks
Annual Risk to Humans from Nuclear, Coal, and Oil Fuel Cycles for a 1000-MW Plant (ES) **D 16**

Human Skeletal Muscles
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Human Teeth
Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**

Human Walking Motion
An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**

Humane Trapping
Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**

Humanities
Humanities and Technology (EN) **My 69**

Humidity Control
A Regenerable CO_2 and Humidity Control System for Shuttle (76-ENAs-60) (A) **N 93**

Humidity Removal
CO_2 and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**

Hung, W. Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**

Hung, W. S. Y. A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**; Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (A) **F 80**

Hunn, B. D. Cost Optimization of Solar Heating of Buildings in Northern Regions (75-WA/Sol-9) (A) **Mr 93**

Hunt, K. H. Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**; Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Algebraic Loci and Couplings (76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**

Hunter, D. Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**

Hunting Stability
Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**

Huntsinger, J. P. Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **Jl 90**

Hurtt, J. H. Testing of Forgings (75-Pet-43) (A) **Ja 118**

Huston, R. L. An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**

Hutter, E. Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**

Hutton, M. Simplification of High-Order Mechanical Systems Using the Routh Approximation (75-WA/Aut-10) (A) **Ap 94**

Hwang, C. T. Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**

Hybrid Airships
The Age of Hybrids (C) **Jl 42**

Hybrid Computers
An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **Jl 90**

Hybrid Journal Bearings
On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) (A) **Ja 118**

Hybrid Technology
Cash Award Program for Ph.D. Students and Educators (EN) **Ag 65**

Hybrid Thrust Bearings
Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**

Hydracids
Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Hydrastep System
Electronic Water Level Gage (IF) **F 53**

Hydraulic Gas Compressors
Performance of Hydraulic Gas Compressors (76-FE-5) (A) **Ag 94**

Hydraulic Rams
The Automatic Hydraulic Ram: Its Theory and Design (76-DE-17) (A) **S 90**

Hydraulic Systems
Predicting Optimum Two-Stage Valve Closure (75-WA/FE-2) (A) **Je 108**

Hydraulic Turbines
A Study of the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines (75-WA/FE-18) (A) **Je 110**

Hydrocarbon-Air Systems
Computer Program for Constant Pressure or Constant Volume Combustion Calculations in Hydrocarbon-Air Systems (76-DGP-2) (A) **Ag 96**

Hydrocarbon Fuels
Autoignition Characteristics of Hydrocarbon Fuels at Elevated Temperatures and Pressures (76-GT-3) (A) **Jl 87**

Hydrocarbon Fuels: Production, Properties and Performance of Liquids and Gases (CB) **My 109**

Hydrocarbonization
From Coal to Clean Fuel (ES) **Mr 19**

Hydrocarbons
Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**

Hydrodynamic Pressure Fields
Hydrodynamic Pressure Field on a Slender Ship Moving Over a High Frequency Wavy Shallow Bottom (76-APM-22) (A) **S 100**

Hydrodynamic Lubrication
Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) (A) **Ja 120**
A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**

Hydrodynamics
The Hydrodynamics of a Plug Bearing (75-Lub-36) (A) **Ja 122**

Hydroelectric Projects
African Hydroelectric Projects (IF) **Jl 54**

Hydroelectric Stations
Childs and Irving—Historic Hydro Duo **Je 98**
Real Nostalgia Trip (C) **Ag 42**

Hydrogen
Energy: The Solar-Hydrogen Alternative (CB) **Je 123**
Hydrogen as a Fuel in Compression Ignition Engines **Ap 34**
Hydrogen from Waste (BTR) **Je 54**
Sunlight May Power a Hydrogen Economy (BTR) **My 46**

Hydrogen Chloride
Results of a Firetube Test Boiler in Flue Gas with Hydrogen Chloride and Fly Ash (75-WA/HT-39) (A) **My 100**

Hydrogen Technology
Hydrogen-Powered House (BTR) **O 61**

Hydromagnetic Boundary Layers
Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**

Hydro-Pneumatic Ride Strut
An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**

Hydro-Scheme
Hydro-Scheme on Amu Darya (IF) **F 53**

Hydrostatic Bearings
Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**

Hydrostatic Extrusion
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**
Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) (A) **Ja 120**
A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) (A) **Ja 122**
A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**

HYGAS Process
Materials Considerations in the HYGAS Process (76-PVP-60) (A) **D 101**

I

IAESTE
see **International Association for the Exchange of Students for Technical Experience**

IAPS
see **International Association for the Properties of Steam**

Ice Thickening
A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**

Icing Prevention
A New System for Preventing Icing of Gas Turbine Inlets (76-GT-84) (A) **Jl 96**

Icing Problems
Icing Problems—Review of Simulated Ice Ingestion Tests (76-GT-128) (A) **Ag 93**

Iddan, D. Analysis and Design of Disposable Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**

Idealists
Idealists in a Real World **D 81**

Ileri, A. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**
Iloeje, O. C. Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**
Imazu, A. Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

Immiscible Liquids
Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**

Impact Analysis
Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) (A) **F 82**
A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**

Impact Pair Configuration
Shape and Frequency Composition of Pulses From an Impact Pair (76-DET-36) (A) **N 100**

Impacted Helical Springs
Radial Expansion of Impacted Helical Springs (75-WA/APM-25) (A) **Jl 98**

Impedance Methods
Determination of the Dynamic Structural Response Characteristics of a Large Diesel Engine by Means of the Low Level Impedance Method (76-DGP-9) (A) **Ag 97**

Imperfect Columns
Creep Buckling of Imperfect Columns (76-APM-10) (A) **S 99**

Impinging Air Jets
Heat Transfer Characteristics of an Impinging Jet in a Crossflow (75-WA/HT-100) (A) **Je 116**
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**

Impingement Surface
Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**

Implantable Fluid System
Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**

Imports
Imports—A Continuing Threat (NB) **Jl 63**

Implicit Algorithms
On the Unconditional Stability of an Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**

Impulse Delivery
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**

Impulse Loads
Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**

Imwalle, D. E. High Performance Epicyclic Gears for Gas Turbines (76-GT-88) (A) **Jl 97**

Incidence Angles
Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**

Incinerators
Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**

Incipient Failure Detection
Incipient Failure Detection in CH-47 Helicopter Transmissions (75-WA/DE-16) (A) **Mr 105**

Inclined Plates
Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**

Incompressible Flow
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**

Individual Retirement Accounts
Individual Retirement Accounts for Engineers (PS) **F 83**

Induction Generators
Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**

Industrial Boilers
Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**

Industrial Burners
Combustion Noise in Industrial Burners (75-WA/Fu-5) (A) **My 94**

Industrial Development
Closing the Gap Between Research and Practice (76-DET-86) (A) **D 95**

Industrial Gas Turbines
New Marine and Industrial Gas Turbine (BTR) **Ap 54**
Total Flame Radiation and Two Color Flame Temperature in Industrial Gas Turbine Combustion Systems (76-HT-57) (A) **N 88**

Industrial Gear Drives
Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**

Industrial Heat Stress
Mistakes Made in the Heat of Things (BTR) **Ag 47**

Industrial Hygiene
Engineering Biological Evaluation of the Work Environment (75-WA/SAF-4) (A) **Je 117**

Industrial Machines
Machine Design Techniques **F 16**

Industrial Plant Siting
Industrial Plant Siting (CB) **Jl 101**

Industrial Plants
Energy Conservation Considerations for the Design of New Industrial Plants (76-IPC-Pwr-4) (A) **S 93**

Industrial Power
The Industrial Power Engineer Battles the Energy Crunch **Jl 76**

Industrial Power Conference
Economic Treatment and Operation of Boilers (76-IPC-Pwr-3) (A) **S 93**
Energy Conservation Considerations for the Design of New Industrial Plants (76-IPC-Pwr-4) (A) **S 93**
Energy Conservation in a Large Chemical Company (76-IPC-Pwr-5) (A) **S 93**
Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) (A) **S 93**
The Outlook for Petroleum Power Plant Fuels (76-IPC-Pwr-6) (A) **S 93**
Price and Availability of Western Coal in the Midwestern Market (76-IPC-Pwr-7) (A) **S 94**
Some Adverse Effects of Stress Corrosion in Steam Turbines (76-IPC-Pwr-8) (A) **S 93**
Treatment of Condensate Returns at Industrial Plants (76-IPC-Pwr-1) (A) **S 93**

Industrial Power Rates
Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) (A) **S 93**

Industrial Productivity
Material Handling—Toward Greater Productivity (NR) **Je 70**

Industrial Turbine Engine
The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission (75-WA/GT-11) (A) **F 81**

Industrial Wastes
Advance in Waste Recovery (BTR) **N 47**
How to Dispose of Toxic Substances and Industrial Wastes (CB) **D 107**
The Treatment of Industrial Wastes (CB) **Jl 100**

Industry
Industry's Energy Alternatives (ES) **Ja 11**
The Landscape of Industry (CB) **S 103**

Inelastic Analysis
Verification and Qualification Activities in Japan of Inelastic Analysis Computer Programs (76-PVP-44) (A) **D 102**

Inelastic Behavior
Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**

Inelastic Deformation
The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**

Inelastic Response
Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**

Inertia Forces
Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**

Inextensional Deformation
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) (A) **S 98**

Infinite Determinants
A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) (A) **S 99**

Inflatable Structures
Heat Transfer from Inflatable Structures (75-WA/HT-97) (A) **Je 116**

Inflation
Electric Rates in Today's Economy (75-Tex-9) (A) **Ja 125**

Inflection Circle
Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**

Inflight Engine Performance
Inflight Engine Performance Evaluations (76-GT-70) (A) **Jl 95**

Information Retrieval
Computer-Aided Information Retrieval (CB) **F 88**

Information Systems Architecture
Information Systems Architecture (CB) **My 108**

Infrared Absorption
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**

Infrared Radiance
Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**

Infrared Spectrometers
Versatile IR Spectrometer (BTR) **N 52**

Infrared Techniques
Infrared Temperature Measurement Applied to Engineering Design Analysis (75-WA/TM-3) (A) **My 96**

Infrared Temperature Mapping
Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**

Inhomogeneities
Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**

Initial Stress
Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**

Injector Concepts
The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**

Inlet Distortions
The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **Jl 88**

Inlet Filtration
Air Inlet Filtration for Gas Turbine Units (76-GT-81) (A) **Jl 95**

Inlet Temperatures
The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission (75-WA/GT-11) (A) **F 81**

In-Line Reducers
In-Line Reduction (BTR) **N 49**

Inner Cylinder Rotation
Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**

Inoyama, T. Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**

In-Plane Moment Loading
Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

In-Service Inspection
Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**

Instability
An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**
Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Instability Analysis
Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**

Instantaneous Invariants
Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**

Instantaneous Kinematics
Instantaneous Kinematics of a Special Two-Parameter Motion (76-DET-4) (A) **N 97**
Institutional History
Philadelphia's Philosopher Mechanics: A History of the Franklin Institute 1824–18y5 (CB) **Ja 126**
Instrument Ball Bearings
Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**
Instrument Contact Spring
Instrument Contact Spring Design Considerations (76-DE-44) (A) **S 93**
Insulation
Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**
Insulation Materials
Fur and Feathers May Hold Key to Insulation (EN) **O 70**
Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**
Integral Flanges
Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**
Integral Forgings
New Design of PWR Reactor Vessel Using Large Forgings (76-PVP-73) (A) **D 105**
Integrated Design Projects
Negev Development—An Integrated Design Project for Mechanical Engineering Students (76-DE-7) (A) **Ag 100**
Interacting Cracks
Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**
Interactive Computer Programs
Interactive Engineering (BTR) **My 47**
Intercity Transportation
A Review of Short Haul Passenger Transportation (CB) **D 107**
Interconnection Schemes
Interconnections for Microelectronics (76-DE-14) (A) **Ag 101**
Interdisciplinary Programs
The Interdisciplinary Approach in the Teaching Of Technology-Society Courses (75-WA/TS-1) (A) **Mr 94**
Interdisciplinary Teams
Management By Task Force: A Manual on the Operation of Interdisciplinary Teams (CB) **Ag 102**
Interface Conditions
Quasi-Coupling—An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**
Interfacial Waves
Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**
Interference Fit Fasteners
On Through Cracks at Interference Fit Fasteners (76-PVP-5) (A) **D 98**
Intermediate Heat Exchangers
Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**
Internal Air Systems
Gas Turbine Engine Internal Air Systems: A Review of the Requirements and the Problems (75-WA/GT-1) (A) **F 80**
Internal Combustion Engines
Internal Fire (CB) **D 107**
DYNA—A New Family of Controls: Development of a New Electronic Governor System for Internal Combustion Engines (76-DGP-7) (A) **Ag 96**
Internal Combustion Locomotives
The British Internal-Combustion Locomotive: 1894–1940 (CB) **Ja 126**
Internal Damping
Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **Jl 96**
Internal Gear Pumps
Reduction of the Contaastress in Internal Gear Pumps (76-DET-40) (A) **N 101**
International Association for the Exchange of Students for Technical Experience
Engineering Training With an International Dimension (EN) **Ja 62**
International Association for the Properties of Steam
Dynamic Viscosity Data **Je 101**
International Cooperation
A Question (C) **Ja 34**
International Correspondence
Woterbuch des patentwesens in funf sprachen. Deutsch, Englisch, Franzosisch, Spanisch, Russisch (CB) **D 106**
International Events
Three International Events Slated for Rio (NR) **Ag 59**
International Ultraviolet Explorer
Thermal Control of the International Ultraviolet Explorer (76-ENAs-38) (A) **O 97**
Interocean '76
Coming: Interocean '76 Congress (BTR) **My 61**
Intershaft Bearings
Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **Jl 93**
Interval Data
Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**
Intrablade Computing System
A Nearly Three-Dimensional Intrablade Computing System for Turbomachinery—Part I: General Description (76-FE-19) (A) **Ag 96**, Part II: System Details and Additional Examples (76-FE-20) (A) **Ag 96**
Intraocular Pressure
Viscoleastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-Wa/Bio-2) (A) **Mr 96**
Intrinsic Thermocouples
Intrinsic Thermocouple Measurement Errors (76-HT-65) (A) **N 89**
Intrinsic Transients
Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**
Inverse Heat Conduction
Criteria for Comparison of Methods of Solution of the Inverse Heat Conduction Problem (75-WA/HT-82) (A) **My 106**
Inversion Process
Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE-9) (A) **Ag 100**
Inviscid Effects
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**
Involute Gears
Approximate Calculation of Power Loss in Involute Gears (75-PTG-2) (A) **Ja 114**
On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**
Ion Microprobe Analyzers
Window on the Cell (BTR) **Ja 41**
Irvine, T. F. *(editor)* Steam and Air Tables in SI Units: Including Data for Other Substances and a Separate Mollier Chart for Steam (CB) **My 108**
Isaacson, R. J. Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**
Iscovici, S. Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**
Ishii, M. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**
Isizaki, T. Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**
Islam, O. Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**
Isolated Piping Section
Analysis of Overpressure Conditions in an Isolated Piping Section (76-PVP-8) (A) **D 98**
Isolation Valve Bodies
Experimental-Analytical Correlation for the Pressure Analysis of a Loop Isolation Valve Body (76-PVP-69) (A) **D 105**
Isothermal Elastohydrodynamic Lubrication
Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 1—Theoretical Formulation (75-Lub-11) (A) **Ja 119**; Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**
Isothermal Ring Rolling
Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **Jl 97**
Isothermal Surfaces
Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**
Isotope Separation
Now Read This (ES) **N 15**
Issid, N. T. Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
Iwakura, C. Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**
Iwasaki, T. Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**
Iyengar, S. K. R. The Role of Modeling and Simulation in the Design and Appraisal of Fluid Power Systems (76-DET-92) (A) **D 96**

J

Jacketed Pressure Vessels
Development of a Jacketed Pressure Vessel: A Design Case Problem (76-DE-33) (A) **S 91**
Jacko, R. B. Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**
Jackson, D. F. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**
Jackson, D. R. Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**
Jackson, J. K. Conceptual Design of a Biological Specimen Holding Facility (76-ENAs-30) (A) **O 96**
Jackson, J. S. Social Implications of Technology: An Economic Model Based on Efficiency (75-WA/Aut-2) (A) **Ap 93**
Jackson, M. D. Fuel Savings by Deactivating 8 Power Cylinders on a V-16 Engine (76-DGP-10) (A) **Ag 98**
Jacob, R. O. Utility Experience with Regenerative Cycle Combustion Turbines (76-GT-85) (A) **Jl 96**
Jacobs, H. R. Heat Transfer Characteristics of a Direct Contact Volume Type Boiler (76-HT-23) (A) **O 101**; Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**; Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**
Jacobs, M. L. An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**
Jagow, R. B. Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**
Jaklitsch, J. J., Jr. ASME Issues Energy Policy Statement (Ed) **Ja 3**; The Bicentennial — A Look Back (Ed) **My 3**; Metric Conversion Act: Finally A Law (Ed) **F 3**; R&D Funding: An Upward Trend (Ed) **Mr 3**
Jakub, M. T. Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants (75-Pwr-15) (A) **Ja 112**
Jalli, H. S. Updating Our Calculations (C) **My 39**
James, G. *(editor)* Mathematics Dictionary (CB) **D 106**
James, L. A. Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) (A) **Je 111**
James, R. C. *(editor)* Mathematics Dictionary (CB) **D 106**
James, R. K. Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**; Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Jamison, W. E. Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**
Jayadev, T. S. Wind-Powered Electric Utility Plants (75-WA/Pet-1) (A) **My 95**
Jeelani, S. Surface Integrity in Machining AISI 4340 Steel (75-Prod-33) (A) **Ap 105**
Jendrzejczyk, J. A. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**
Jeney, A. F. Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**
Jenkins, G. M. XFV-12A Propulsion System Development (76-GT-125) (A) **Ag 92**
Jenkins, J. T. A Mechanical Model for Mammalian Tendon (75-WA/APM-20) (A) **Je 121**
Jenkins, P. E. Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) (A) **My 96**

Jensen, A. Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**

Jentz, N. E. Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Jequier, N. *(editor)* Appropriate Technology (CB) **D 106**

Jet-Diffusion Flames

Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**

Jet Engine Bearings

Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 x 10 ⁶ DN (76-LubS-16) (A) **S 97**

Jet Engines

Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**

Jet Mixing

Jet Mixing as Defined by Water Models (75-WA/GT-2) (A) **F 80**

Jet Planes

Can Coal Fly Jets? (BTR) **D 53**

Jet Wake Passages

A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**

Jets

A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**

Some Aspects of Gas-Particle Jets in a Cross Flow (75-WA/HT-5) (A) **Ap 99**

Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) (A) **My 96**

Jibben, J. J. An Automatic Control System for Sonic Inlets (75-WA/Aut-1) (A) **Ap 93**

Job Hunting Guide

Job Hunting Guide: Official Manual of the Employment Association (CB) **F 89**

Jofriet, J. C. The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**

Johannsen, H. *(author)* International Dictionary of Management: A Practical Guide (CB) **Je 123**

Johnson, C. E. Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**

Johnson, C. O. V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**

Johnson, G. R. Dynamic Simulation for Performance Analysis of Solar Heated and Cooled Building (75-WA/Sol-8) (A) **Mr 93**

Johnson, M. R. Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**

Johnson, N. R. Elections to Fellow Grade **Mr 91**

Johnson, R. C. Role of the Programmable Pocket Calculator in Machine Design with Helical Spring Examples (76-DET-101) (A) **D 96**

Johnson, R. W. Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**

Johnston, J. F., Jr. Elections to Fellow Grade **F 74**

Johnston, J. P. Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**; Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**

Johnston, S. C. Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**

Johnstone, B. Vertical Motions During Railcar Impacts (75-WA/RT-10) (A) **F 78**

Johnstone, W. D. *(author)* For Good Measure: A Complete Compendium of International Weights and Measures (CB) **Ag 103**

Joining Techniques

Novel Lightweight Joint (BTR) **S 56**

Jojoba Development

A Jojoba Happening in the Negev (BTR) **Ja 40**

Jones, C. E. Elections to Fellow Grade **F 74**

Jones, D. A. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**

Jones, D. I. G. Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element (76-GT-60) (A) **JI 94**

Jones, D. P. Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Jones, E. H., Jr. Flow Distribution Manifolds (76-FE-7) (A) **Ag 94**

Jones, J. A. *(author)* Engineers Involved in Continuing Education (CB) **Ap 108**

Jones, J. R. An Analog Computer Method for Dynamically Optimum Harmonic Cam Motions (75-WA/DE-11) (A) **F 87**

Jones, J. W. Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**

Jones, N. Dynamic Behavior of Ideal Fiber-Reinforced Rigid-Plastic Beams (76-APM-21) (A) **S 100**; Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**

Jones, O. C., Jr. An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**; SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**; Who Wants What? ASME Member Survey Finds Out **S 38**

Jones, P. Fuel Savings by Deactivating 8 Power Cylinders on a V-16 Engine (76-DGP-10) (A) **Ag 98**

Journal Bearings

On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) (A) **Ja 118**

Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**

Short Bearing Analysis Applied to Rotor Dynamics, Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**

Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**

A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) (A) **S 100**

Junior Engineering Technical Society

JETS (EN) **Mr 73**

Jur, T. A. Using the Contour Line Method of Representing Failure Criteria as a Design Aid (76-DET-75) (A) **D 94**

K

Kadambi, V. Evaluation of Unsteady State Conduction Heat Transfer by a Noniterative Finite-Difference Method (76-HT-72) (A) **N 90**

Kaftanoglu, B. Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**

Kahil, J. E. Automatic Nondestructive Testing of Oil Field Tubular Goods (75-Pet-42) (A) **Ja 117**

Kahng, C. H. The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**

Kakarala, C. R. A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**; Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**

Kalasinsky, C. An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**

Kamyab, D. Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**

Kanazawa, S. Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**

Kannel, J. W. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**

Kanninen, M. F. Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Kanodia, V. L. Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**

Kao, T. T. Free Convection Along a Non-Isothermal Vertical Flat Plat (75-WA/HT-15) (A) **Ap 100**

Kar, S. An Investigation on the Diffusion of Momentum and Mass of Fuel in a Diesel Fuel Spray (76-DGP-1) (A) **Ag 96**

Karam, J. T., Jr. The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**

Karassik, I. J. *(editor)* Pump Handbook (CB) **Ag 102**

Kardos, G. Design—The Critical Stage (76-DE-6) (A) **Ag 100**; The Snotruk Transmission—A Case Problem (76-DE-32) (A) **S 91**

Karim, G. A. The Determination of Flame Propagation Rates in Explosive Media Employing Fiber Optics (76-GT-7) (A) **JI 87**; An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **JI 88**; An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**; Hydrogen as a Fuel in Compression Ignition Engines **Ap 34**

Kasagi, N. Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**

Kastor, R. L. The Application of Circulation Ra e Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**

Kato, S. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**

Katz, S. Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion (75-WA/Flcs-4) (A) **Je 114**

Katz, Z. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**

Kaufman, H. G. *(editor)* Career Management: A Guide to Combating Obsolescence (CB) **Mr 108**

Kaufman, R. E. KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**

Kauzlarich, J. J. Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**

Kawada, A. An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**

Kawai, N. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) (A) **Mr 102**

Kawashima, H. Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**

Kays, W. M. Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**

Kearley, J. A. Dilemma of the Professional (C) **Je 46**

Keer, L. M. An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**

Kececioglu, D. B. Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) (A) **Mr 106**

Keilman, L. R. Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**

Keith, R. M., Jr. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) (A) **S 93**

Keller, C. Small Reactors + Helium Turbines = Near-Term Energy Savings **S 45**

Keller, D. Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**

Kelley, B. W. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Kelly, D. V. Elections to Fellow Grade **F 74**

Kelly, H. B. Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 96**

Keltner, N. R. Intrinsic Thermocouple Measurement Errors (76-HT-65) (A) **N 89**; Quasi-Coupling—An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**

Kelton, A. A. Planning for Biomedical Research in Space: The Visiting Research Scientist (76-ENAs-67) (A) **N 94**

Kemper, C. C. Forecasting Impacts on Solid Waste Resource Recovery Systems (76-ENAs-46) (A) **O 97**

Kennedy, L. A. Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**

Kenny, D. P. A Method for Calculating Cascade/Channel Endwall Boundary Layer Crossflow (76-GT-77) (A) **JI 95**

Kentfield, J. A. C. A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **JI 87**

Kerlin, G. *(author)* Cracking Down: Oil Refining and Pollution Control (CB) **D 107**
Kerr, C. N. Canadian IAESTE (C) **Ap 49**
Kester, J. D. Noise Technology Requirements for Future Aircraft Powerplants (76-GT-69) (A) **JI 95**
Ketterling, C. F. Forecasting Impacts on Solid Waste Resource Recovery Systems (76-ENAs-46) (A) **O 97**
Keune, F. A. Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**
Khalil, I. M. Losses in Radial Inflow Turbines (76-FE-9) (A) **Ag 94**
Khamkanist, W. Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall (75-WA/FE-20) (A) **Je 110**
Kicks
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**
Kidwell, J. R. Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**
Kilaparti, S. R. Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**; Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**
Kim, R. H. Computer-Aided Design Analysis and Selection of Heat Exchanger with Phase-Changing Media (75-WA/PID-5) (A) **My 97**
Kimball, D. E. Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) (A) **My 97**
Kimball, V. S. *(author)* Waste Oil Recovery and Disposal (CB) **Ag 103**
Kinematic Hardening
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**
Kinematics
Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**
Instantaneous Kinematics of a Special Two-Parameter Motion (76-DET-4) (A) **N 97**
King, C. D. A Mature Bosch CO Reduction Technology (76-ENAs-14) (A) **O 95**
King Liu, Y. The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**
King, R. I. Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**
King, R. T. Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**
Kinoshita, K. Development of The Nissan YTP-12 Gas Turbine Engine (76-GT-101) (A) **Ag 90**
Kinsel, W. C. Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**
Kinyon, B. W. FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Kipp, H. W. An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**
Kiraly, R. J. Magnetic Heart Pump (C) **S 48**
Kirillov, P. L. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**
Kirk, J. A. An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**
Kirk, R. G. Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **JI 93**; Short Bearing Analysis Applied to Rotor Dynamics, Part 1: Theory (75-Lub-30) (A) **Ja 121**; Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**
Kiscaden, R. W. Field Experience with the Pace Control System (76-GT-106) (A) **Ag 90**
Kissinger, L. D. CO and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**
Kittelson, D. B. Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**
Kjaer-Pedersen, N. Performance Analysis of PWR Power Ramp Tests (75-WA/HT-68) (A) **My 103**
Klapatch, R. S. Gas Turbine Emissions and Performance on Methanol Fuel (75-Pwr-22) (A) **Ja 113**
Klarhoefer, Ch. Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**
Klat, S. R. Hydrogen as a Fuel in Compression Ignition Engines **Ap 34**
Klaus, E. E. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**
Kleinfelter, M. M. Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**
Klemm, J. L. The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) (A) **S 98**
Klimann, A. H. R. A Question (C) **Ja 34**
Klosterman, A. L. Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques (75-WA/Aero-9) (A) **My 99**
Klus, J. P. *(author)* Engineers Involved in Continuing Education (CB) **Ap 108**
Knauf, C. L. A Test Program to Provide an Economic Evaluation of Techniques to Control Corrosion in Gas Turbines (76-GT-87) (A) **JI 96**
Knebel, M. E. Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**
Kniazeqycz, B. G. The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation (75-Pwr-27) (A) **Ja 113**
Knife Impact
Wood Planar Noise (75-WA/PID-6) (A) **My 97**
Knight, J. A. Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**
Knit Fabrics
Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**
Knott, R. Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**
Knuckle Boom Capacity
Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) (A) **S 92**
Knudsen, P. Performance Analysis of PWR Power Ramp Tests (75-WA/HT-68) (A) **My 103**
Kobayashi, A. S. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**; A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**; Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**; Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**; Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**; Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**
Kobayashi, S. Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) (A) **Mr 101**
Kobori, T. Analysis of Pre-rewetting Heat Transfer (75-WA/HT-33) (A) **Ap 103**; An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
Koch, C. C. Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) (A) **F 81**
Kodnir, D. S. An Investigation in the Field of Elastohydrodynamics (76-LubS-4) (A) **S 96**
Koebke, R. M. SI Comments (C) **F 39**
Koenig, A. A. Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**
Kohler, M. Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**
Kohli, D. Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**; Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**
Kohn, A. O. CFM56 Turbofan Engines—General Electric/SNECMA Cooperative Engineering Development Program (76-GT-78) (A) **JI 95**
Komanduri, R. Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**
Komolori, K. Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Kool, P. Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor Stage (76-GT-18) (A) **JI 88**
Koosinlin, M. L. Transfer of Heat in Rotating Systems (76-GT-25) (A) **JI 89**
Kooyman, O. J. Engineering Biological Evaluation of the Work Environment (75-WA/SAF-4) (A) **Je 117**
Kopper, F. C. Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **JI 97**
Kops, L. Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) (A) **Ap 104**
Kordes, E. E. Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**
Kordisch, H. Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**
Kordy, E. Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**
Kosobud, R. F. Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**
Kotlin, J. J. A Versatile Two-Cycle Diesel Engine—The EMD Model 645 Series (76-DGP-5) (A) **Ag 97**
Kovacs, S. G. The Design and Development of a Magnetic Heart Pump (75-WA/Bio-9) (A) **Mr 100**; The Magnetic Heart Pump Challenge **Je 36**
Kowalski, G. J. Heat Transfer from Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) (A) **My 102**
Kozik, T. J. Determination and Probabilistic Foundation Forces Resulting from an Unbalanced Turbine (76-GT-120) (A) **Ag 92**
Kraatz, R. Gasification of Solid Waste in Fixed Beds **JI 24**
Kraft, R. E. Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**
Krajcinovic, D. Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) (A) **S 99**
Kraly, E. F. Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**
Krase, J. M. Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **JI 97**
Kratochvil, J. A. Minimizing Fuel Costs (75-WA/Pwr-13) (A) **F 86**
Kraus, A. D. Elections to Fellow Grade **Mr 91**
Kraus, H. Analysis of Bottom Entry Nozzles for Atmospheric Storage Tanks (75-Pet-23) (A) **Ja 115**
Kraus, J. H. An Automotive CVT **O 38**; The Selection and Optimization of a Continuously Variable Transmission for Automotive Use (75-WA/Aut-16) (A) **Ap 94**
Krause, H. H. Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**; The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CS-7) (A) **My 100**
Krauter, A. I. Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**
Kreider, J. F. *(author)* Solar Heating and Cooling Engineering, Practical Design, and Economics (CB) **Ap 107**
Kreith, F. *(author)* Solar Heating and Cooling: Engineering, Practical Design, and Economics (CB) **Ap 107**
Kretschmer, D. The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **JI 86**
Krieg, R. D. A Practical Two Surface Plasticity Theory (75-WA/APM-12) (A) **Je 120**
Krishnamurthi, R. Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**
Krol, J. The Automatic Hydraulic Ram: Its Theory and Design (76-DE-17) (A) **S 90**
Krutzsch, W. C. *(editor)* Pump Handbook (CB) **Ag 102**
Kuak, Y. C. Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) (A) **O 105**
Kuchemann, D. *(editor)* Progress in Aerospace Sciences (CB) **Ap 107**
Kuenstler, P. A. Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **JI 96**
Kugler, B. A. The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) **My 95**
Kuhre, C. J. The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**
Kulshrestha, P. K. Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**
Kumar, S. Application of Cross-Correlation Technique to

the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 84**

Kumar, V. Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**

Kumble, R. G. The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) (A) Mr 104

Kumeno, K. Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**

Kunder, G. A. Radwaste System Startup and Operation, Three Mile Island Nuclear Station, Unit 1 (75-Pwr-14) (A) **Ja 111**

Kunitake, H. Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**

Kunitomo, T. Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**

Kunz, R. Prediction of Traction in Sliding EHD Contacts (75-Lub-7) (A) **Ja 119**

Kurokawa, K. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Kurosaki, Y. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) (A) **Mr 102**

Kurtz, E. F., Jr. Pressure-Distribution Data for Steam Ejectors (75-WA/PID-3) (A) **My 96**; Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) (A) **My 96**

Kurzeka, W. J. Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**

Kuzay, T. M. Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**; Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**

Kwiatkowski, A. W. Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**

L

Labadie, P. Gas Turbine Air Filtration—A Means of Sulfidation Control (76-GT-59) (A) **Jl 93**

Labra, J. J. Application of a Finite Element Computer Program for Studying Failures and Affecting Design Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**

Labyrinth Seals
Advanced Labyrinth Seal Design Performance for High Pressure Ratio Gas Turbines (75-WA/GT-22) (A) **F 83**

Lackey, M. E. Four Variations of a Potassium Vapor Topping Cycle (75-WA/Ener-3) (A) **Mr 96**

Ladd, H. E. Mechanism Design Using Animation (76-DET-54) (A) **N 102**

Laessig, R. E. Simulation-Gaming in Energy Management Education (75-WA/Mgt-2) (A) **Ap 96**

Lague, G. An Axisymmetric Finite Element in Natural Coordinates (75-WA/PVP-24) (A) **Ap 98**

Lahotl, G. D. Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**

Laird, A. D. K. Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**

Laird, E. W. Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**

Laks, B. Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**

Lakshminarayana, B. Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**; Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**; Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**

Lakshminarayana, K. Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**

Lalanne, M. Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**; Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element Techniques (76-GT-60) (A) **Jl 94**

Lambright, H. W. *(author)* Governing Science and Technology (CB) **Ag 103**

Laminar Flow
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**
Numerical Study of Some Three-Dimensional Laminar Free-Convective Flows (76-HT-34) (A) **O 101**
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes: I-Laminar Flow (75-WA/HT-109) (A) **Je 117**

Laminar Fluidic Systems
Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**

Laminar Slot Jets
Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**

Laminar Viscous Flow
Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**

Laminar Wall Jets
Some Experiments on Laminar Wall Jets (75-WA/Flcs-7) (A) **Je 115**

Laminated Composites
Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**

Laminated Cylinders
Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) (A) **S 98**

Laminates
Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**

Lampsa, M. A. Maximizing Distance of the Golf Drive: An Optimal Control Study (75-WA/Aut-12) (A) **Ap 94**

Land Use Planning
Legislating Land Use (WW) **Ja 66**

Landes, J. D. Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**

Landing Guidance Equipment
. . .And Landing System (BTR) **N 45**

Landon, M. Nuclear Notes (C) **My 42**

Landt, R. C. Criteria for Evaluating Bolt Head Design (76-DE-30) (A) **S 91**

Langefors, B. *(author)* Information Systems Architecture (CB) **My 108**

Langer, B. F. Nuclear Reactions (C) **Ap 45**

Langhame, Y. Unsteady Heat Conduction in Variable Conductivity Soils (75-WA/HT-89) (A) **My 106**

Langston, L. S. Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **Jl 92**

Languages
Wörterbuch des patentwesens in fünf sprachen. Deutsch, Englisch, Franzosisch, Spanisch, Russisch (CB) **D 106**

Lantzman, F. P. Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**

Lap Joint
Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**

Lapin, E. E. Theoretical Performance of Vertical Axis Wind Turbines (75-WA/Ener-1) (A) **Mr 96**

Larinoff, M. W. Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**

Larson, L. D. The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**

Laser Absorption Spectrometry
Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**

Laser Beam Welding
Laser Beam Welding (IF) **D 64**

Laser Beams
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**
Laser Beam-Atmospheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**
Laser Beams Prevent Fraud (IF) **N 56**
Slick Sleuths (BTR) **Jl 47**

Laser Drilling
Laser Drilling Machine (IF) **Mr 58**

Laser Energetics
First Laser Energy Research Center (EN) **Ag 64**

Laser Engines
Laser Engines (BTR) **Jl 43**
Think About It (C) **N 42**
Toward Laser Engines (C) **D 46**

Laser Geodynamic Satellite
Satellite Aid to 'Quake Prediction (BTR) **My 54**

Laser Heating
Temperatures in Human Teeth Due to Laser Heating (75-WA/Bio-8) (A) **Mr 99**

Laser Radiation
Fewer Cavities, Thanks to Laser (BTR) **N 53**
Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Laser Velocimeter
Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Laser Velocimeter (76-GT-49) (A) **Jl 92**

Lasers
Craters Produced by High Power Density Lasers (75-WA/HT-49) (A) **My 101**
Light from the Atom (BTR) **Ja 38**

Lasseter, T. J. The Numerical Simulation of Heat and Mass Transfer in Multi-Dimensional Two-Phase Geothermal Reservoirs (75-WA/HT-71) (A) **My 104**

Lassman, L. A. Taking Task Force to Task (C) **Ja 36**

La Stella, J. Programs to Evaluate Gas Turbine Maintenance and Operating Techniques (76-GT-124) (A) **Ag 92**

Lauer, J. L. Infrared Emission Spectra of Elastohydrodynamic Contacts (75-Lub-10) (A) **Ja 119**

Laughlin, W. T. The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**

Launder, B. E. The Near-Field Character of a Jet Discharged Through a Wall at 90 Deg to a Main Stream (75-WA/HT-108) (A) **Je 117**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes: I—Laminar Flow (75-WA/HT-109) (A) **Je 117**

Laurendeau, R. The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**

Laux, P. SI Comments (C) **F 39**

Lava Flow
Vast Lava Flow on Venus (BTR) **D 51**

Layered Composites
Harmonic Waves in Layered Composites: Comparison Among Several Schemes (75-WA/APM-19) (A) **Je 120**

Layered Solids
On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) (A) **Ja 120**

Layers
The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**

Leaf Springs
Instrument Contact Spring Design Considerations (76-DE-44) (A) **S 93**

Leak Detection
Speedy Drum Leak Detection (IF) **Jl 54**

Leak Detectors
Portable Leak Detector (BTR) **Ja 46**

Leakages
The Pipeline's Leaking! (ES) **Ja 10**

Least-Squares Technique
Three-Dimensional Analysis of an Elastic Plate-Cylinder Intersection by the Boundary-Point-Least-Squares Technique (76-PVP-34) (A) **D 101**

Lebeck, A. O. Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Lee, F. Taking Task Force to Task (C) **Ja 36**

Lee, S. Y. Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**

Lee, T.-C. A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) (A) **S 99**

Lee, T. W. Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms Part 1: Theory (76-DET-24) (A) **N 99**; Part 2: Applications (76-DET-25) (A) **N 99**

Le Fevre, H. P. Advancements and Application of Pro-

grammable Analog Control Technology (76-GT-122) (A) **Ag 92**; An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**

Leigh, D. C. More on "Energy Cycles" (C) **O 53**

Leisher, W. B. Think About It (C) **N 42**

Leman, J. D. Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**

Lemezis, S. An Advanced Coal Gasification System for Electric Power Generation (75-Pwr-6) (A) **Ja 111**

Lengquist, R. Geothermal Power—The "Sleeper" in the Energy Race **D 25**

Lennox, W. C. Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) (A) **O 105**

Lentz, J. S. Practical Aspects of Plate Testing (75-Pet-48) (A) **Ja 118**

Lenz, E. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**

Leonard, R. L. Results Produced by a Technology Assessment of OCS Oil and Gas Resources (75-WA/TS-6) (A) **Mr 94**

Lepofsky, R. J. A Powered Bipedal Walking Prosthesis (75-WA/Bio-14) (A) **Mr 100**

Lesions

Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**

Leslie, E. N. Automated Water Jet Cleaning **D 40**; Use of the Water Jet in Automated Production Cutting (75-WA/Aut-21) (A) **Ap 95**

Leslie, J. S. Editor's Page Praised (C) **My 40**; Worthwhile Wrinkles (C) **Ja 35**

Lesso, W. G. OILSIM-A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**

Letan, R. Design of Particulate Direct Contact Heat Exchanger: Uniform, Countercurrent Flow (76-HT-27) (A) **O 101**

Letson, K. N. Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**

Leukemia Victims

System Aids Leukemia Victims (BTR) **Ja 39**

Leung, C. L. Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**

Levi, R. Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**

Levitan, L. L. Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**

Levitsky, M. Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**

Levy, E. K. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**; Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**; Symmetrical Laminar Channel Flow with Wall Suction (75-WA/FE-6) (A) **D 100**

Levy, H. J. Nozzle Design for ASME Code Requirements (76-PVP-20) (A) **D 100**

Levy, M. J. Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**

Levy, S. J. Legal Developments in Product Safety **Ag 22**

Lewis, C. H. A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**

Lewis, G. B. An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**

Lewis, L. D. An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**

Lewis, W. B. The Role of Shuttle in Health Care Systems Development for Space Stations (76-ENAs-29) (A) **O 96**

Li, D. F. Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**

Li, K. W. Cycle Analysis of Air-Storage Power Plants (76-GT-41) (A) **Jl 91**; Preliminary Thermal Analysis of Air-Storage Gas Turbine System (75-Pwr-20) (A) **Ja 112**

Li, P. Error Analysis of an Intrinsic Transient Heat Flux Sensor (76-HT-62) (A) **N 89**

Liao, G. S. Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) (A) **F 85**

Library Science

Abstracting Concepts and Methods (CB) **My 108**

Licensing Procedures

How to Become A Professional Engineer **S 24**

Life Boats

The Mini-Boat: A Life Boat for Helicopter Crewmen (76-ENAs-61) (A) **N 94**

Life Scatter

Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Life Science Payloads

Operational Plans for Life Science Payloads—from Experiment Selection Through Postflight Reporting (76-ENAs-63) (A) **N 94**

Life Sciences

Environmental Parameters of Shuttle Support for Life Sciences Experiments (76-ENAs-24) (A) **O 96**

Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 96**

Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**

Life Sciences Research

Planning for Life Sciences Research in Space (76-ENAs-52) (A) **N 92**

Life Support Systems

Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**

Ligament Efficiency

Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Ligaments

Plastic Strain Concentrations in Ligaments (76-PVP-32) (A) **D 101**

Light-Emitting Diodes

Automobile Electronics (IF) **Ap 65**

Light Transmission

Voice Over Light-ly (BTR) **Ap 55**

Lightwave Communication

Mass Communication via Lightguides (BTR) **S 59**

Lightweight Joints

Novel Lightweight Joint (BTR) **S 56**

Limit Analysis

A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**

Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**

Limon, L. Treatment of Condensate Returns at Industrial Plants (76-IPC-Pwr-1) (A) **S 93**

Lin, S. P. Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**

Lin, S. S. Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Lind, E. F. Track/Train Dynamics Research and Progress: Phase One (75-WA/RT-9) (A) **F 77**

Linderoth, L. S., Jr. Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**

Lindsey, A. M. Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Lindsted, R. D. Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**

Line Pipes

Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**

Line Printer

High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**

Lineaments

Skymapping High-Water Zones (BTR) **Je 63**

Linear Acceleration

Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Linear Distributed Systems

On the Design of Suboptimal Regulators for Linear Distributed Systems (75-WA/Aut-9) (A) **Ap 94**

Linear Measurements

Fractions to Millimeters (CB) **Je 123**

Linear Segmented Solar Concentrators

Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Linear Temperature Variations

Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**

Linear Transient Response

Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**

Lingaiah, K. State of Art at ResearchLevel in the Design of Wildhaber-Movikov Circular Arc Gears (76-DET-78) (A) **D 94**

Linhares, A. B. Public Sector Technology Transfer—The Policy Connection (75-WA/Aero-3) (A) **My 98**

Linkage Mechanisms

A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**

Linkage Parameters

Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**

Linkage Synthesis

Graphical Solution of the Branch and Order Problems of Linkage Synthesis for Multiply Separated Positions (76-DET-16) (A) **N 98**

KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**

Linkage Tolerances

A Note on a Probabilistic Study Concerning Linkage Tolerances and Coupler Curves (76-DET-3) (A) **N 97**

Link-Seal Assembly

"Crackless Rubber" Seal (BTR) **My 53**

Linnecke, C. B. Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**

Lippman, R. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95; N 36**

Liquefied Natural Gas

Hold that LNG! (ES) **D 17**

LNG Development Project (IF) **Ag 57**

Vaporization of LNG with Closed-Cycle Gas Turbine

Liquid-Filled Channels

Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**

Liquid Films

An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**

Liquid Metals

Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**

Liquid Nitrogen

315,000-Liter Vacuum Tank (IF) **Jl 55**

Liquid Radwaste

Dresden Station Liquid Radwaste System Modifications (75-Pwr-26) (A) **Ja 113**

Liquid and Solid Radwaste Experience at the Nine Mile Point BWR (75-Pwr-9) (A) **Ja 111**

The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation (75-Pwr-27) (A) **Ja 113**

Liquid-Ring Compressors

Liquid-Ring Vacuum Pump (IF) **Ag 57**

Liquid Sodium

Transparently Opaque (BTR) **Ap 54**

Liquid Transport

An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**

Liquids

Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**

Hydrocarbon Fuels: Production, Properties and Performance of Liquids and Gases (CB) **My 109**

Lisini, G. G. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**

List, H. A. Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**

Litchman, H. M. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Little, J. W. Status Report—Subsonic Aircraft Noise Reduction (76-GT-116) (A) **Ag 91**

Littmann, W. E. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Liu, C. R. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Liu, J. Y. Analysis of a Planet Bearing in a Gear Trans-

mission System (75-Lub-23) (A) **Ja 121**; Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) (A) **S 96**

Liu, M.-K. Numerical Simulation of the Effect of Climatic Conditions on Heat Transfer from a Building (76-HT-71) (A) **N 90**

Liu, V. R. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**

Lloyd, J. R. The Other Side of the Outlet (C) **Ja 36**

Lo, C.-H. Computer Aided Design of Disk Cams (76-DET-62) (A) **D 92**

Load Eccentricity

On Eccentrically Loaded Fasteners (75-WA/DE-9) (A) **Mr 104**

Load Life Exponents

Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Loading

Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) (A) **S 96**

Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**

Loads

Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) (A) **S 101**

The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**

Loan Funds

Loan Fund for Women in Graduate Degree Programs (EN) **Ap 72**

Locklin, D. W. The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**

Lockwood, F. C. An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**; Transfer of Heat in Rotating Systems (76-GT-25) (A) **Jl 89**

Locomotives

The British Internal-Combustion Locomotive: 1894–1940 (CB) **Ja 126**

Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Locomotives (75-WA/RT-12) (A) **F 78**

S.A.R. Orders A-C Locomotive (IF) **My 60**

Loehrke, R. I. Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**; Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**; The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**

Logan, E. Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**

Logic Design

A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits (75-WA/Aut-22) (A) **Ap 95**

Logistics

Logistic Support of Aero Derivative Marine Gas Turbines in the Royal Navy (76-GT-44) (A) **Jl 92**

Lohmann, R. P. The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) (A) **Ag 93**

Lohmeier, A. Elections to Fellow Grade **D 90**

Lom, W. L. *(author)* Substitute Natural Gas: Manufacture and Properties (CB) **O 106**

Long- Distance Telephones

Pause-and-Pulse Conversation (BTR) **N 48**

Long Wave Disturbances

Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**

Longevity

Route to Longevity? (BTR) **Je 61**

Loom Noise

Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**

Loomis, R. W. Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

Loop Isolation Valves

Experimental-Analytical Correlation for the Pressure Analysis of a Loop Isolation Valve Body (76-PVP-69) (A) **D 105**

Loran, B. I. Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

Lord, P. R. Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**; The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) (A) **Ja 124**

Loss Reductions

Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) (A) **Je 119**

Loss-of-Coolant Accident

Impact of Fuel Rod Design on the Loss-of-Coolant Accident Analysis (75-WA/HT-80) (A) **My 105**

A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**

Single Tube and Rod Bundle Blowdown Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Louis, G. L. Some Specific Problems and Findings in Open-End Spinning (76-Tex-8) (A) **N 96**

Louis, J. F. Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **Jl 98**

Love, T. J. Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**

Love, W. J. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**; Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**; Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**; Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**

Love Waves

Scattering of a Love Wave by the Edge of a Thin Surface Layer (75-WA/APM-24) (A) **Jl 98**

Lowe, A. L., Jr. Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**

Lowell, C. M. Elections to Fellow Grade **Je 106**

Lowery, R. L. Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**

Lubricant Analysis

Lubricant Analysis Spots "Wear Metals" (BTR) **Ja 46**

Lubricant Film

On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**

Lubrication Technology

Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) (A) **Ja 121**

Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) (A) **S 96**

Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**

Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**; Part 2: (75-Lub-44) (A) **Ja 124**; Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**

Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-Lubs-17) (A) **S 97**

Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**

On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) (A) **Ja 118**

Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**

Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**

Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**

Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3×10^6 DN (76-LubS-16) (A) **S 97**

An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**

An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**

Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) (A) **Ja 123**

Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**

On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) (A) **Ja 120**

Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) (A) **Ja 120**

The Hydrodynamics of a Plug Bearing (75-Lub-36) (A) **Ja 122**

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**

Infrared Emission Spectra of Elastohydrodynamic Contacts (75-Lub-10) (A) **Ja 119**

Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**

An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**

An Investigation in the Field of Elastohydrodynamics (76-LubS-4) (A) **S 96**

Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 1—Theoretical Formulation (75-Lub-11) (A) **Ja 119**; Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**

A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**

Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**

Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**

The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**; Part II: Experimental (76-LubS-10) (A) **S 97**

Lubrication by a Melting Solid (75-Lub-26) (A) **Ja 121**

On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**

A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) (A) **S 96**

Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) (A) **Ja 121**

An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**

The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) (A) **S 96**

Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) (A) **Ja 123**

Prediction of Ball Motion in High Speed Thrust-Loaded Ball Bearings (75-Lub-1) (A) **Ja 118**

Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**

Prediction of Traction in Sliding EHD Contacts (75-Lub-7) (A) **Ja 119**

Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**

Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**

A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) (A) **Ja 122**

Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**

Seal Development for Large, Submersible Electric Motors (75-Lub-17) (A) **Ja 119**

Short Bearing Analysis Applied to Rotor Dynamics, Part 1: Theory (75-Lub-30) (A) **Ja 121**; Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**

A Simplified Model for the Elastohydrodynamic Traction

Between Rollers (75-Lub-6) (A) **Ja 118**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**
A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**
Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**
A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**
Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) (A) **S 98**
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) (A) **Ja 120**
Lucia, A. C. On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) (A) **Ap 98**
Lumped Parameter Models
A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**
Lumsdaine, E. An Automatic Control System for Sonic Inlets (75-WA/Aut-1) (A) **Ap 93**; Heat Transfer Analysis of a Cavity-Type Solar Radiometer (75-WA/Sol-2) (A) **Mr 92**
Lund, J. W. Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) (A) **Ja 123**
Luttrell, N. W. Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**
Lyczkowski, R. W. Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite-Difference Approximations (75-WA/HT-23) (A) **Ap 102**
Lyon, J. R. An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**
Lyons, D. W. Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**; Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) (A) **Ja 125**
Lyons, J. L. Fluid Mechanics for the Valve Designer (76-PVP-71) (A) **D 105**

M

Mable, H. H. Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**
Maccallum, N. R. L. Models for the Representation of Turbomachine Blades During Temperature Transients (76-GT-23) (A) **Jl 89**
MacDonald, J. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**
MacFarlane, J. A. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**
Machine Design
Machine Design Techniques **F 16**
Role of the Programmable Pocket Calculator in Machine Design with Helical Spring Examples (76-DET-101) (A) **D 96**
Machine Parameters
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**
Machine Tools
1976 Machine Tool Fair (IF) **Je 67**
Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**
A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) (A) **Mr 102**
Machinery
Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 94**
State of the Art Review of Sliding Vane Machinery (76-DET-90) (A) **D 96**
Machines
Optimizing Designs of Machines and Mechanisms by Functional Approach (76-DET-15) (A) **N 98**
Philosophers and Machines (CB) **Jl 100**
Machining
Manufacturing Nuclear Valves **Mr 38**
Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) (A) **Mr 104**
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**
Machining Chatter
An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**
Machining Economics
Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**
MacIsaac, B. D. An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **Jl 90**
Macken, N. A. An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**
Macroeconomic Models
A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) (A) **Ap 95**
Macroerrors
Stochastic Characterization and Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**
Mayr, O. *(editor)* Philosopher and Machines (CB) **Jl 100**
Madeheim, H. Developing Safe Products **Je 31**
Madey, R. A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**
Mager, T. R. Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**
Magnesium
Magnesium vs. Aluminum (NB) **D 72**
Magnesium-Aluminum-Silicon Combinations
High-Temperature Corrosion in Gas Turbines and Steam Boilers by Fuel Impurities, Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**
Magnetic Fields
Effect of Magnetic Field on Wear (75-PTG-5) (A) **Ja 114**
Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**
Magnetic Fluid Seals
Rotating Shaft Seals: Part 2—The Magnetic Fluid Seal Considered in the Context of Seven Previous Basic Types (76-DET-97) (A) **D 96**
Magnetic Heart Pump
The Design and Development of a Magnetic Heart Pump (75-WA/Bio-9) (A) **Mr 100**
The Magnetic Heart Pump Challenge **Je 36**
Magnetic Properties
Critical Surveys of Data Sources: Electrical and Magnetic Properties of Metals (CB) **D 106**
Magnetic Separators
New Magnetic Separators (IF) **D 64**
Magnetoelastic Buckling
Magnetoelastic Buckling and Vibration of a Rod Carrying Electric Current (75-WA/APM-28) (A) **Jl 99**
Magnetohydrodynamics
New MHD Electrode Materials (BTR) **Jl 46**
Magnetospheric Studies
Two Antennas for ESA (IF) **Ag 57**
Mahdavian, S. M. Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) (A) **Ja 120**; Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**
Maine, R. B. The Development of A Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**
Mainstream Turbulence Intensity
The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**
Maintenance Cost Reduction
"Do It Yourself" Maintenance—An On-Site Approach to Lower Costs and Improved Equipment Availability (76-GT-108) (A) **Ag 90**
Maintenance Management
Maintenance Management Techniques (CB) **S 103**
Maintenance Problems
Programs to Evaluate Gas Turbine Maintenance and Operating Techniques (76-GT-124) (A) **Ag 92**
Maizza-Neto, O. Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**
Majumdar, A. K. Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**
Malik, Z. Buckling of Thin-Walled Cylindrical Tanks (76-PVP-19) (A) **D 99**
Mallory, K. M., Jr. Planning for Life Sciences Research in Space (76-ENAs-52) (A) **N 92**
Mammalian Tendon
A Mechanical Model for Mammalian Tendon (75-WA/APM-20) (A) **Je 121**
Management
The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) (A) **Ap 96**
International Dictionary of Management: A Practical Guide (CB) **Je 123**
The Management of Product Planning (75-WA/Mgt-6) (A) **Ap 96**
A Model of Simulated Management Experience for Engineering Managers (75-WA/Mgt-5) (A) **Ap 96**
New Products and the Future (75-WA/Mgt-4) (A) **Ap 96**
New Products Through Acquisition (75-WA/Mgt-3) (A) **Ap 96**
Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule (75-WA/Mgt-1) (A) **Ap 96**
Product Planning and Development—An Evolutionary Process—One Company's Experience (75-WA/Mgt-8) (A) **Ap 96**
Simulation-Gaming in Energy Management Education (75-WA/Mgt-2) (A) **Ap 96**
Management Wrinkles
Worthwhile Wrinkles (C) **Ja 35**
Managerial Balancing Dominance
Developing Long-Term Personal Worth **My 34**
Mancini, T. R. Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**
Mang, H. A. Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**
Mangione, B. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) (A) **S 93**
Manifolds
Flow Distribution Manifolds (76-FE-7) (A) **Ag 94**
Manion, F. M. Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 114**
Manipulator Control System
Remote Manipulator System (BTR) **S 57**
Manipulator Interference
The Manipulator Interference Problem (76-DET-68) (A) **D 93**
Man-Made Insulation Materials
Fur and Feathers May Hold Key to Insulation (EN) **O 70**
Manning, M. P. The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**
Manos, W. P. Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Cars and Equipment (75-WA/RT-6) (A) **F 77**; Vertical Motions During Railcar Impacts (75-WA/RT-10) (A) **F 78**
Mansour, W. M. On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**; Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**
Manufacturing Engineering
Tool and Manufacturing Engineering Handbook: A Reference Work for Manufacturing Engineers (CB) **N 104**
Manufacturing Practices
Progress in Manufacturing Practices for a Warm-Worked Superalloy (76-GT-110) (A) **Ag 90**
Maples, G. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**
Margolis, D. L. Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**
Margolis, R. L. Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**
Mariante, W. Optimum Design of a Complex Planar Mechanism (76-DET-47) (A) **N 101**
Marine Gas Turbines
Assembly and Test of a Direct Reversing Marine Gas Turbine (76-GT-27) (A) **Jl 90**
Coating Technology for the Marine Gas Turbine Airfoil Application (76-GT-111) (A) **Ag 91**

Direct-Reversing Marine Gas Turbine (BTR) **Ja 43**
Logistic Support of Aero Derivative Marine Gas Turbines in the Royal Navy (76-GT-44) (A) **JI 92**
Marine Gas Turbines
New Marine and Industrial Gas Turbine (BTR) **Ap 54**
Marine Main Propulsion
Epicyclic Gearing for Gas Turbine Main Propulsion (76-GT-24) (A) **JI 89**
Marine Planetary Gears
Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **JI 90**
Marine Propulsion Clutch
The Redundant Omega Clutch—A Marine Propulsion Clutch for Turbines (76-GT-65) (A) **JI 94**
Marine Towing
Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**
Marine Vessels
Study of Light Weight Turbine Transmission Systems (76-GT-121) (A) **Ag 92**
Markham, D. M. A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**
Markho, P. M. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**
Marko, P. H. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part II: Experimental (76-LubS-10) (A) **S 97**
Marks, C. H. Airline Pilots, Athletes, and Engineers (C) **D 45**
Martin, D. The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**
Martin, D. P. *(author)* Microcomputer Design (CB) **D 107**
Martin, G. C. Parametric Studies on a Railroad Freight car Mathematical Model (75-WA/RT-11) (A) **F 78**
Martin, H. B. The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**
Martin, K. F. Power in an Accelerating Mechanism (76-DET-60) (A) **D 92**
Martin, L. Transit Question (C) **N 42**
Martindale, W. R. Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**
Maruyama, S. Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**
Maruyama, T. Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**
Marvin, W. C. A Method of Simulating the Performances of a Pebble Bed Thermal Energy Storage and Recovery System (76-HT-73) (A) **N 90**
Marx, E. Radioactive Waste (C) **D 46**
Marzeski, J. W. Ambient Temperature and Pressure Corrections for Aircraft Gas Turbine Idle Pollutant Emissions (76-GT-130) (A) **Ag 93**
Marzouk, E. S. A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **JI 87**
Mas, P. A. A Critical Review of NO_x Correlations for Gas Turbine Combustors (75-WA/GT-7) (A) **F 80**
Mascenik, W. M. UTS: Accelerating Public Sector Technology Utilization (75-WA/Aero-2) (A) **My 98**; UTS: Solving Local Problems **JI 35**
Masek, R. V. An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**
Mason, D. Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**
Mass
Momentous Momentum (C) **N 42**
Mass Flow
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**
Mass Transfer
On Calculation of Heat and Mass Transfer in Jet Type Direct Contact Heaters (76-HT-21) (A) **O 100**
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**
Heat and Mass Transfer from Freely Falling Drops (75-WA/HT-37) (A) **Ap 103**
Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**
The Numerical Simulation of Heat and Mass Transfer in Multi-Dimensional Two-Phase Geothermal Reservoirs (75-WA/HT-71) (A) **My 104**
Masses
Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**
Massoud, M. Brief Survey of Spring Design Nomographs (76-DET-77) (A) **D 94**
Mastel, J. Works Good, Tastes Good (C) **Mr 46**
Material Handling Device
Soluble Material Handling Device (IF) **Je 67**
Material Properties
Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**
Materials
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**
Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**
Materials in Industry (CB) **Ap 107**
Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) (A) **Je 111**
Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**
Materials Handling
Interested in Materials Handling? **Ja 105**
Mathematical Models
A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**
Parametric Studies on a Railroad Freight Car Mathematical Model (75-WA/RT-11) (A) **F 78**
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**
Mathematical Theories
Toward a Mathematical Theory of Environmental Monitoring (75-WA/Aut-7) (A) **Ap 93**
Mathematics
Mathematics Dictionary (CB) **D 106**
Mathews, C. S. Design and Development of America's Most Powerful Diesel Engine—The 20 Cylinder RV (76-DGP-4) (A) **Ag 96**
Mathey, C. J. The Management of Product Planning (75-WA/Mgt-6) (A) **Ap 96**; Managing Product Planning **D 20**
Mathieu, J. Secondary Flows in Compressor Bladings (76-GT-57) (A) **JI 93**
Mathieu-Type Equations
A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) (A) **S 99**
Matlock, S. W. Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**
Matrix Loop Equations
A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**
Matsuki, M. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **JI 91**
Matsumoto, N. Approximately Calculating Optimum Pressure Ratios for Various Gas Turbine Cycles (76-GT-21) (A) **JI 89**
Matsuzaki, Y. On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**
Matthew, G. K. Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**; Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**
Mattson, R. J. On Plutonium's Risks (C) **Ag 41**
Maurer, R. E. Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**
May, W. R. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**
Mayer, M., Jr. A Unique Cotton Silver Drafting System (76-Tex-4) (A) **N 95**
Mayers, J. Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**
Mayle, R. E. Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **JI 97**
Mayo, R. Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**
McBride, D. G. Interconnections for Microelectronics (76-DE-14) (A) **Ag 101**
McCaffrey, B. R. A Test Program to Provide an Economic Evaluation of Techniques to Control Corrosion in Gas Turbines (76-GT-87) (A) **JI 96**
McCarthy, T. C. Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
McClelland, W. A. Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques (75-WA/Aero-9) (A) **My 99**
McCollum, G. W. Operational Plans for Life Science Payloads—from Experiment Selection Through Post-flight Reporting (76-ENAs-63) (A) **N 94**
McCormick, J. The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**
McCoy, K. J. Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**
McCracken, W. E. Cleanup Questioned (C) **Je 46**
McDonald, C. F. Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **JI 93**; Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **JI 97**
McDonald, J. G. Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**
McDonald, J. S. LMFBR Steam Generators Areas Requiring Special Attention (75-WA/HT-104) (A) **Je 116**
McFarlan, T. W. Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**
McFarland, E. R. Gas Turbine Blade Heat Transfer with Rough Surfaces (75-WA/HT-107) (A) **Je 117**
McGomis, G. The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
McGowan, J. G. Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**
McGrew, J. M., Jr. Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**
McHugh, J. D. Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **JI 97**; Seal Development for Large, Submersible Electric Motors (75-Lub-17) (A) **Ja 119**; Self-Pressurizing Seals Keep Submersible Motors Dry **F 20**
Mcldas (Man-Computer Interactive Data Access System)
Mcldas, the Superhuman Machine (BTR) **F 49**
McKechnie, R. E. Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) **Ap 92**; Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**; A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**
McKee, K. E. Energy Payback (C) **Ag 42**
McKinnley, L. E. An Automotive Gas Turbine Control System (76-GT-123) (A) **Ag 92**
McLaughlan, P. Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**
McMillan, R. E. The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
McMullan, J. T. *(editor)* Energy Resources and Supply (CB) **D 106**
McMullen, J. C. Control and Automation of Single Generator Combined Cycle Plants (75-Pwr-18) (A) **Ja 112**

McMurrin, J. C. Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
McNamara, J. E. Fluidic Applications to Aircraft Environmental Control Systems (76-ENAs-21) (A) **O 95**
McRoberts, K. L. The Myths of Productivity (76-DET-103) (A) **D 97**
McSweeney, T. B. Cost Optimization of Solar Heating of Buildings in Northern Regions (75-WA/Sol-9) (A) **Mr 93**
McVaugh, J. M. The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) (A) **Mr 106**
McWhannell, D. C. Shape and Frequency Composition of Pulses From an Impact Pair (76-DET-36) (A) **N 100**
Mean Flow
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**
Mean Stress
The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**
Measurement Errors
Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**
Measuring Systems
Programmable Measuring System (BTR) **Jl 49**
Mechanical Couplings
Mechanical Couplings—A General Geometrical Theory Part I: Theorems on Algebraic Loci and Couplings (76-DET-5) (A) **N 97**; Part 2: Examples and Applications of the Theorems (76-DET-6) (A) **N 97**
Mechanical Design
Mechanical Design and the Programmable Calculator (76-DET-91) (A) **D 96**
Mechanical Devices
A Mechanical Device for Detecting and Functioning in a Planetary-Type Acceleration Field (76-DET-72) (A) **D 93**
Mechanical Drafting Procedures
Quick on the Draw (BTR) **Je 60**
Mechanical Drive Turbines
Mechanical Drive Turbines and Energy Conversion for the 80's (75-WA/Pwr-1) (A) **F 85**
Mechanical Engineering
ME Abroad (C) **Jl 42**
ME's Broad Coverage (C) **Jl 42**
200 Years of Mechanical Engineering **Ja 29**
Mechanical Engineers
Speaking Out—The ME in the Environmental Revolution **N 18**
Mechanical Equipment
Lubrication Symposium: A View of Present and Future Mechanical Equipment **Ag 75**
Mechanical Failures
Product Liability: The Engineer in Court **Jl 20**
Mechanical Hardware Analysis
Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**
Mechanical Heart
The Magnetic Heart Pump Challenge **Je 36**
Mechanical Joints
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**
Mechanical Logical Elements
The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A) **N 97**
Mechanical Models
A Mechanical Model for Mammalian Tendon (75-WA/APM-20) (A) **Je 121**
Mechanical Operating Problems
Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**
Mechanical Properties
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Mechanical Pulse Filter
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**
Mechanical Systems
A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**
Simplification of High-Order Mechanical Systems Using the Routh Approximation (75-WA/Aut-10) (A) **Ap 94**
A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**
Mechanism Case Studies
Mechanism Case Studies III (76-DET-59) (A) **D 92**
Mechanism Design
Mechanism Design Using Animation (76-DET-54) (A) **N 102**
Mechanism Synthesis
Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms Part 1: Theory (76-DET-24) (A) **N 99**; Part 2: Applications (76-DET-25) (A) **N 99**
Mechanisms
Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**
Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**
Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**
Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**
Dynamic Characteristics of Contact-Separation in Mechanisms (76-DET-14) (A) **N 98**
Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**
Optimizing Designs of Machines and Mechanisms by Functional Approach (76-DET-15) (A) **N 98**
Power in an Accelerating Mechanism (76-DET-60) (A) **D 92**
Medical Thermography
Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**
Meek, C. L. *(editor)* Encyclopedia of Computer Science (CB) **N 104**
Megow, L. Nuclear Reactions (C) **Ap 48**
Mehdizadeh, P. Casing Collapse Performance (75-Pet-41) (A) **Ja 117**
Meier, D. R. What's in it for Us? (C) **My 45**
Meikle, P. G. Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**
Melting Points
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**
Melting Solids
Lubrication by a Melting Solid (75-Lub-26) (A) **Ja 121**
Meltzer, A. C. *(author)* Principles of Digital Computer Design (CB) **Ag 104**
Meltzer, L. M. Pension Reform (C) **Jl 42**
Membership Poll
Poll Proposed (C) **Jl 42**
Membrane Prestress
Dynamics of Initially Stressed Plates (76-APM-29) (A) **S 101**
Memorials
A Memorial to Nicola Tesla (NR) **N 64**
Merati, J. K. A Finite Element Large Deformation Analysis of Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**
Mercer, J. L. UTS: Accelerating Public Sector Technology Utilization (75-WA/Aero-2) (A) **My 98**; UTS: Solving Local Problems **Jl 35**
Merchant, H. C. Development of a Response Monitoring System and Application to a Barge (75-WA/OcE-10) (A) **Ap 91**
Merchant Marines
Merchant Fleet Expands (IF) **O 65**
Meriam, J. L. Elections to Fellow Grade **Je 106**
Meridional Wall Profiling
Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**
Merkin, J. H. Free Convection Boundary Layer on an Isothermal Horizontal Cylinder (76-HT-16) (A) **O 99**
Merte, H. Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
Messina, J. P. *(editor)* Pump Handbook (CB) **Ag 102**
Metabolic Activities
Effect of Nitrogen Limitation on Metabolic Activities of Activated Sludge (76-ENAs-40) (A) **O 97**
Metal Cutting
On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**
Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) (A) **Ap 105**
Metal Cutting Tools
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**
Metal Disks
Program Plan for the Design and Spin Test of Ceramic Blade-Metal Disk Attachments (76-GT-37) (A) **Jl 91**
Metal Flow
Metal Flow in Two-Die Swaging (75-WA/Prod-23) (A) **Ap 104**
Metal Forming
Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) (A) **S 101**
Metal Oxycarbides
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**
Metal Wear
Lubricant Analysis Spots "Wear Metals" (BTR) **Ja 46**
Metal Welds
"Anaerobic" Sealant (BTR) **Je 59**
Metallic Glass
Metallic Glass (BTR) **Je 58**
Metallic Structures
Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**
Metallic Targets
Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**
Metals
Critical Surveys of Data Sources: Electrical and Magnetic Properties of Metals (CB) **D 106**
Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**
Interfacial Phenomena in Metals and Alloys (CB) **F 89**
Molded FRP: Challenge to Metals (BTR) **F 43**
Metals Shortages
Metals Shortages? (NB) **S 68**
Metcalfe, A. G. Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **Jl 97**
Metered Powder Metals
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
Meters
A Design Method on Propeller Current Meters (75-WA/FM-5) (A) **Je 118**
Methacoal
Methacoal (ES) **Je 19**
Methane Pyrolysis
Reaction Rate Determination and Correction for Finite Quenching Rate in Shock Induced Pyrolysis of Methane via a Simple Shock Tube (76-GT-13) (A) **Jl 87**
Methanol
Gas-Stretcher (BTR) **Je 55**
Methanol Fuel
Gas Turbine Emissions and Performance on Methanol Fuel (75-Pwr-22) (A) **Ja 113**
Methanol Production
Cost of Methanol Production from Coal, Waste and Wood (ES) **Jl 17**
Metric Conversion
Conference to Explore Metric Conversion Issues (NR) **Mr 66**
Metric Conversion Act: Finally A Law (Ed) **F 3**
Metric Yearbook; Metrication in the United States: Metric Conversion Act of 1975 (CB) **O 106**
Shape Up or Ship Out (C) **My 43**
Metric Design
ASME/ANMC Metric Design Seminars (NR) **D 70**
Joint Metric Design Seminar (NR) **S 67**
Metric Fasteners
First U.S. Metric Fastener Standards Book (TL) **Je 122**
Metric System
Canada Goes Metric (CB) **F 88**
The Elegance of SI (C) **D 45**
Heavenly Help for SI (C) **Je 47**
More Metricomment (C) **O 50**
More Metrics (C) **F 38**
One More Metric Voice (C) **O 50**
Protesting Dual Units (C) **Ja 34**
Use SI or Whatever. . . (C) **D 45**

What's in it for Us? (C) **My 45**

Metric Trivia

Metric Trivia (NR) **Mr 69**

Metrication

The Building Industry and SI (BTR) **N 48**

Metz, D. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**

Metz, S. A. Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Metzger, D. E. Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **Jl 96**

Meyers, J. Use SI or Whatever. . . (C) **D 45**

Meyerson, M. More on "Energy Cycles" (C) **O 52**

Michel, R. Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **Jl 94**

Micklelson, S. D. Extending the Life of Household Appliances (76-DE-2) (A) **Ag 99**

Microbiology Studies

Microbiology Studies in the Space Shuttle (76-ENAs-23) (A) **O 95**

Microcomputers

Basic Microcomputers Down in Price (BTR) **D 58**

Microcomputer Design (CB) **D 107**

Microeconomic Systems

Bond Graphs of Microeconomic Systems (75-WA/Aut-8) (A) **Ap 93**

Microelectrodes

The Cyborgs are Coming (BTR) **N 51**

Microelectronics

Electronic Engine Control: A Draper-Li Breakthrough Ripens in 25 Years **S 35**

Interconnections for Microelectronics (76-DE-14) (A) **Ag 101**

Microerrors

Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**

Microporosity

"Anaerobic" Sealant (BTR) **Je 59**

Microprocessors

Calculator Users' Guide and Dictionary (CB) **O 106**

Foresee Computer-Run Homes (BTR) **Mr 50**

Microprocessor Based Controls for Gas Turbines (76-GT-91) (A) **Jl 97**

Midha, A. An Approximate Method for the Dynamic Analysis of Elastic Linkages (76-DET-49) (A) **N 102**

Miedema, B. Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**

Mignon, P. CO Removal from Submarines Atmospheres by IR-45: Feasibility Study (76-ENAs-4) (A) **O 92**; Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Mihalasky, J. DTC Vs. DTCR Vs. DFSO = Conflict (?) **Mr 34**

Mii, T. Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**

Mikhail, A. G. Axisymmetric Stokes Flow Past Cones Including the Case of the Needle (75-WA/APM-2) (A) **Je 119**

Milau, J. S. High Efficiency Power Conversion for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**

Milenkovic, V. A New Constant Velocity Coupling (76-DET-33) (A) **N 100**

Miles, D. D. Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**

Mill Feeder Sets

Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 86**

Mill Wastes

New Facility to Convert Mill Wastes (NB) **Ag 60**

Miller, D. R. Rubber-Tired Rapid Transit—Part 1: System Concepts **My 26**, Part 2: Technical Characters **Je 39**

Miller, E. C. Budget Deficits, Surpluses, and the Five-Year Plan (Ed) **N 13**; Controlling Member Dues (Ed) **Ag 17**; Engineering: A World View (Ed) **D 15**; Government Responds to ASME Energy Statement (Ed) **S 17**; The Road Ahead **My 37**; Speak Out for Technology (Ed) **Jl 15**; The Spouses Speak Up (Ed) **O 17**

Miller, G. E. Inception of Cavitation from a Solid Surface (75-WA/DE-13) (A) **Mr 104**

Miller, J. S. Solving the Problem Too Late (C) **S 48**

Miller, L. Information Sources for Plastics (76-DE-16) (A) **S 90**

Miller, T. V. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**

Miller, T. W. The Surface Heat Balance in Simulations of Permafrost Behavior (75-WA/HT-86) (A) **My 105**

Miller, W. P., Jr. Legislating Land Use (WW) **Ja 66**

Milligan, M. W. Wood Planer Noise (75-WA/PID-6) (A) **My 97**

Milling Machines

Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**

Milling Productions

Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**

Mims, W. E. Investigation of a Torsionally Flexible Freight Car (75-WA/RT-13) (A) **F 78**

Minagawa, S. Harmonic Waves in Layered Composites: Comparison Among Several Schemes (75-WA/APM-19) (A) **Je 120**

Minassian, L. M. A Study on Multi-Element Cascades and Airfoils (75-WA/FE-3) (A) **Je 108**

Mine Capacity

Expanded Mine Capacity Forecast (ES) **Mr 18**

Mine Cave-Ins

Cave In! (ES) **O 18**

Mine Rescue Team Helmet

Mine Rescue Team Helmet (76-ENAs-69) (A) **N 95**

Miner, R. V., Jr. Effects of C and Mf Concentration on the Mechanical Properties of Wrought Superalloys Based on NASA IIB-11 Produced from Prealloyed Powders (76-GT-112) (A) **Ag 91**

Mini Boats

The Mini-Boat: A Life Boat for Helicopter Crewmen (76-ENAs-61) (A) **N 94**

Mini-Max Transmissions

Design of Four-Bar Function Generators With Mini-Max Transmission Angle (76-DET-8) (A) **N 97**

Mining Industry

Automation in Mining Industry (BTR) **Je 54**

Mining Safety

Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**

Minoda, M. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**

Minority Enclave

The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**

Minority Engineering Research

ME Expands Program As Independent Agency (EN) **D 75**

Minority Programs

Chicano Students Enter MITE Program (EN) **N 66**

On Minority Programs in Engineering Education **Je 87**

Minority Scholarships

NSPE-Ga. Tech Establish Two New Scholarships for Minorities (EN) **Ap 73**

Minority Students

Getting Minority Students Interested in Engineering (EN) **Ja 63**

Potential Engineers (EN) **Je 80**

Support for Minorities Who Seek Graduate Degrees (EN) **S 70**

Minshall, J. R. Don't Give Us Everything We Ask For (C) **Ap 49**

Minto, W. L. The Wheel Story (C) **Jl 40**

Minto Wheel

Backyard Solar Engine (BTR) **Mr 47**

The Wheel Story (C) **Jl 40**

Minty, A. G. The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**

Mirza, S. Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**

Missiles

Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**

Mitchell, A. H. Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **Jl 96**

Mitchell, J. W. Computer Modeling of Heat-Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**; Heat Transfer from Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) (A) **My 102**

Mitchell, K. L. Spacelab Environmental Control System (76-ENAs-58) (A) **N 93**

Mitchem, M. G. Development of a Technique to Provide a Predictable Solids Separation with the Rotary Mud Separator (75-Pet-31) (A) **Ja 116**

Mitsuda, K. Defects and Fracture Strength of Large Rotor Forgings for Stam Turbines (75-Pwr-10) (A) **Ja 111**

Mitsufuji, A. Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**

Miura, R. Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

Mixed Flow Turbines

A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**

Miyata, M. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**

Miyazaki, N. A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Mizuki, S. Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **Jl 96**

Mobbs, F. R. Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**

Mobile Pyrolysis

Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Mobility-Whirl Methods

Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Mockup Fuel Assemblies

Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup (75-WA/HT-30) (A) **Ap 103**

Modal Information

Identification of Viscous Damping in Structures from Modal Information (76-APM-36) (A) **O 105**

Mode Form Solutions

On an Extremum Principle for Mode Form Solutions in Plastic Structural Dynamics (75-WA/APM-6) (A) **Je 119**

Mode Shapes

Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**

Modeling **O**

The Role of Modeling and Simulation in the Design and Appraisal of Fluid Power Systems (76-DET-92) (A) **D 96**

Moderate Clearance Ratios

Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**

Moes, H. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Moffat, R. J. Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**

Mohamed, M. H. Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**; Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**

Mohammadian, S. Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**

Mohan, D. The Interdisciplinary Approach in the Teaching of Technology-Society Courses (75-WA/TS-1) (A) **Mr 94**

Mohindra, D. An Experimental Investigation of the Height of Gaseous Diffusion Flames in a Concentric Stream of Air or Premixed Air and Fuel (75-WA/GT-9) (A) **F 81**

Molayem, B. NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**

Molecular Gas Radiation

Effect of Molecular Gas Radiation on a Planar, Two-Dimensional Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**

Molecular Sieves

Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Momentum Balancing

Momentum Balancing of Four-Bar Linkages (76-DET-28) (A) **N 99**

Momentum Calculations
Momentous Momentum (C) **N 42**
Momentum Transport
An Investigation of Momentum and Heat Transport in Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) (A) **Ap 99**
Mon, G. A Flueric Laminar Operational Amplifier Scaler (75-WA/Flcs-3) (A) **Je 114**
Monelm, M. T. A. Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**
Monitoring Devices
"Hears" Pressure Changes in LMFBR Coolant (BTR) **F 48**
Monte Carlo Study
Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**
Montgomery, W. O. An Advanced Coal Gasification System for Electric Power Generation (75-Pwr-6) (A) **Ja 111**
Montrone, E. D. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**
Moodey, J. C. Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**
Moon, D. M. Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**
Moon, F. C. Magnetoelastic Buckling and Vibration of a Rod Carrying Electric Current (75-WA/APM-28) (A) **Jl 99**
Moon, S. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95; N 36**
Moore, A. Gas Turbine Engine Internal Air Systems: A Review of the Requirements and the Problems (75-WA/GT-1) (A) **F 80**
Moore, E. F. The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**
Moore, F. K. Analysis of Large Dry Cooling Towers with Spine-Fin Heat Exchange Elements (75-WA/HT-46) (A) **My 100**
Mooring Lines
On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) (A) **Ap 90**
Morales, W. J. Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**
Moretti, P. M. More Metrics (C) **F 38**; Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**
Morgan, M. J. Position Control of Pipelay Barges (75-WA/Aut-18) (A) **Ap 95**
Mori, Y. Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**
Mori, Y. H. Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Moriarty, K. J. Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**
Morita, Y. Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**
Morris, A. W. H. Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**
Morris, G. R. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) (A) **S 93**
Morris, P. A. Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Morrison, E. Nuclear Notes (C) **My 41**
Morrison, H. L. Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**
Morrone, T. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95; N 36**
Mortar Locating Radar (MLR)
Pinpoints Hostile Mortars (BTR) **Ja 40**
Morton, J. Buckling of Thin-Walled Cylindrical Tanks (76-PVP-19) (A) **D 99**; Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**
Mosberg, W. Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) (A) **S 99**
Moschovidis, Z. A. Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**
Moses, H. L. Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate (75-WA/Flcs-8) (A) **Je 115**
Mosier, J. A. Developing Long-Term Personal Worth **My 34**
Motherway, J. E. Design Analysis of A Snap-Action Mechanism (76-DE-35) (A) **S 91**
Motion Compensation Systems
Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**
Motion Study
Motion and Time Study (CB) **D 106**
Motley, F. E. Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**
Motor Cleaning
Motor Cleaning System (IF) **My 60**
Motor Belt Drives
Determining of Pivot Locus for Pivoted Motor Belt Drives (75-WA/DE-29) (A) **Mr 107**
Motor Tests
Superconductive Propulsion Motor Development at NSRDC (75-WA/OcE-8) (A) **Ap 91**
Motor Vehicles
Road Vehicle Aerodynamics (CB) **F 89**
Motorcycle In-Flight Torque
Evel Knievel's Secret **Ag 84**
Motsinger, R. E. Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (6-GT-113) (A) **Ag 91**
Motzer, J. Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **Jl 90**
Moving Loads
Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **Jl 99**
Moving Walls
Developing Boundary Layer Flow in a Channel Having One Longitudinally Moving Wall (75-WA/FE-20) (A) **Je 110**
Moy, H. C. Waste Heat Management of Steam-Electric Power Plants (76-ENAs-44) (A) **N 91**
Moyar, G. J. Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**
Moyle, I. N. Pressure-Distribution Data for Steam Ejectors (75-WA/PID-3) (A) **My 96**
Mraz, G. J. Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) (A) **D 104**
Mruthyunjaya, T. S. Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**
Mud Drilling
Drilling Mud (BTR) **Jl 51**
Mueller, T. J. Elections to Fellow Grade **Je 107**
Muju, M. K. Effect of Magnetic Field on Wear (75-PTG-5) (A) **Ja 114**
Mujumdar, A. S. Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**
Mukherjee, S. Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**
Muhlbaier, D. R. Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup (75-WA/HT-30) (A) **Ap 103**
Mulcahy, T. M. Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**
Mulholland, G. P. Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**
Mulliken, H. B. Nuclear Reactions (C) **Ap 48**
Multileaf Journal Bearings
A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) (A) **S 100**
Multilinear Loop Equations
A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) (A) **N 101**
Multiply Separated Positions
Graphical Solution of the Branch and Order Problems of Linkage Synthesis for Multiply Separated Positions (76-DET-16) (A) **N 98**
Multiport Levers
The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A) **N 97**
Multi-Variable Control
A Multi-Variable Control for a Turbofan Engine Operating at Sea Level Static (76-GT-71) (A) **Jl 95**
Mumford, S. Catalysts for Gas Turbine Combustors—Experimental Test Results (76-GT-4) (A) **Jl 86**
Mumma, S. A. A Method of Simulating the Performances of a Pebble Bed Thermal Storage and Recovery System (76-HT-73) (A) **N 90**
Mundel, M. E. *(author)* Measuring of Enhancing the Productivity of Service and Government Organizations (CB) **Je 123**
Mundkur, P. Numerical Simulation of the Effect of Climatic Conditions on Heat Transfer from a Building (76-HT-71) (A) **N 90**
Municipal Incinerators
Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**
Muntean, G. L. The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**
Mura, T. Two-Ellipsoidal Inhomogeneities by the Equivalent Inclusion Method (75-WA/APM-17) (A) **Je 120**
Murasawa, K. Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**
Murch, L. E. A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) (A) **Ja 122**
Murdock, J. W. *(author)* Fluid Mechanics and its Applications (CB) **Jl 100**
Murphy, L. M. Coming: Solar Power Plants **N 26**
Murr, L. E. *(author)* Interfacial Phenomena in Metals and Alloys (CB) **F 89**
Muscular Force
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**
Musical Instruments
Making Better Musical Instruments from Graphite Composites **Mr 25**
Muska, J. F. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) (A) **F 82**
Muzzy, R. L. Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**
Myocardial Wall Thickness
Myocardial Wall Thickness Transducer (BTR) **D 53**

N

Nader, R. Nuclear Power: More Than A Technological Issue **F 32**; Nuclear Reactions (C) **Ap 45**
Nagano, S. Experimental Evaluation of an Axial-Flow Transonic Compressor (76-GT-34) (A) **Jl 90**
Nagaraj, H. S. Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**
Nagata, T. Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**
Nagel, D. J. Craters Produced by High Power Density Lasers (75-WA/HT-49) (A) **My 101**
Nagel, R. G. Auxiliary Payload Power System Thermal Control (76-ENAs-59) (A) **N 93**
Nagel, W. A. Plea for Involvement (C) **Je 46**
Naghdi, A. K. Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) (A) **Mr 104**
Nagib, H. M. Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**
Nair, E. V. On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**
Nakajima, I. An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
Nakao, H. Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**
Nakra, N. K. Combined Radiation-Convection for a Real Gas (76-HT-58) (A) **O 104**
Nakumura, K. Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**
Narrow Gaps
Non-Axisymmetric Flow in the Narrow Gap Between a

Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**
Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**
Narrow-Band Excitation
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-36) (A) **O 105**
Nash, C. D., Jr. Current Profile Energy and Ocean Moorings (75-WA/OcE-5) (A) **Ap 91**
Nash, C. F. Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**
NASTRAN Modal Analysis
Results of NASTRAN Modal Analysis and Ground Vibration Tests on the YF-12A Airplane (75-WA/Aero-8) (A) **My 99**
Nathan, G. K. A Study of the Design Characteristics of Axial Flow Contra-Rotating Hydraulic Turbines (75-WA/FE-18) (A) **Je 110**
National Aeronautics & Space Administration
NASA's Flight Center Renamed (NR) **Mr 64**
Seek Spacelab Proposals (BTR) **D 50**
National Audubon Society
Engineers Honored for Environmental Conservation (NR) **D 71**
National Bureau of Standards
NBS Nondestructive Evaluation Program (BTR) **Jl 44**
National Computer Conference
Computer Conference Slated for New York City, preview (NR) **My 67**
National Economic Planning
National Planning: How To Do It (NB) **Ja 59**
National Research Council
Opportunities for Research (EN) **D 74**
National Resources
Recognition of the Railroad as a National Resource **Je 96**
Natural Society of Professional Engineers
International Petroleum Exposition and Congress, preview (NR) **Ap 68**
Natural Catastrophes
Physical Aspects of Natural Catastrophes (CB) **Mr 108**
Natural Convection
Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**
Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**
Convection in an Enclosure-Source and Sink Located Along a Single Horizontal Boundary (76-HT-22) (A) **O 100**
Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
The Natural Convection of Air Over a Heated Plate with Forward-Facing Step (76-HT-15) (A) **O 99**
Natural Convection Heat Transfer from Horizontal Tube Bundles (76-HT-35) (A) **O 102**
Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**
Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**
Natural Coordinates
An Axisymmetric Finite Element in Natural Coordinates (75-WA/PVP-24) (A) **Ap 98**
Natural Draft Cooling Towers
Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR (75-WA/HT-44) (A) **My 101**
Natural Draft Performance
Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**
Natural Gas
Don't Ignore Natural Gas (ES) **My 17**
Gas Will Last (C) **S 48**
Our Natural Gas Supply (C) **Ag 41**
Substitute Natural Gas: Manufacture and Properties (CB) **O 106**
Which Way for Alaska's Natural Gas? (ES) **Je 18**
Natural Gas Heat
Comeback for the Coal Furnace (BTR) **Mr 55**
Natural Gas Pipeline
Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**
Natural Phenomena
The Existential Adventure: The Roles of Science and Belief (CB) **Ag 103**
Nau, B. S. An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**
Naval Installations
Propulsion Gear Units for Gas Turbine Naval Installations (76-GT-26) (A) **Jl 89**
Nazli, Z. A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**
NBS
see **National Bureau of Standards**
Neale, K. W. A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**
Near-Wall Regions
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**
Needle, B. Wardrobe Engineering (C) **F 40**
Needle Punched Fabrics
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**
Negev Development
Negev Development—An Integrated Design Project for Mechanical Engineering Students (76-DE-7) (A) **Ag 100**
Neighbors, P. K. Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**
Neill, J. S. Sizing a Cooling Pond for a Power Plant (75-WA/HT-63) (A) **My 103**
Nelson, A. W. Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
Nelson, H. D. The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) (A) **Mr 106**; Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **Jl 96**
Nelson, N. W. Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
Nelson, W. G. Operational Plans for Life Science Payloads—from Experiment Selection Through Post-flight Reporting (76-ENAs-63) (A) **N 94**
Nemat-Nasser, S. Harmonic Waves in Layered Composites: Comparison Among Several Schemes (75-WA/APM-19) (A) **Je 120**
Net Section Rings
Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **Jl 97**
Neubert, V. H. High Frequency Response of Beams (75-WA/APM-18) (A) **Je 120**
Nevendorf, D. W. Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**
New Product Development
Developing New Products: The Role of Research **N 33**
New Products
New Products Through Acquisition (75-WA/Mgt-3) (A) **Ap 96**
New Products Down in '75 (NB) **Ap 71**
New Products and the Future (75-WA/Mgt-4) (A) **Ap 96**
Newcombe, W. R. Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**
Newendorp, P. D. *(author)* Decision Analysis for Petroleum Exploration (CB) **N 105**
Ng, F. W. Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) (A) **Ja 117**
Nice, M. L. Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **Jl 92**
Nicholls, R. *(author)* Composite Construction Materials Handbook (CB) **N 104**
Nichols, J. B. Developing New Products: The Role of Research **N 33**; New Products and the Future (75-WA/Mgt-4) (A) **Ap 96**
Nichols, W. H. Effect of Maintenance on Gas Turbine Reliability (76-GT-68) (A) **Jl 94**
Niebel, B. W. *(author)* Motion and Time Study (CB) **D 106**
Niedzwecki, J. M. On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) (A) **Ap 90**
Nilson, R. H. Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) (A) **S 99**
Nilsson, K. A. Single Tube and Rod Bundle Blowdown Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**
Nishida, K. Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**
Nishimura, M. Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**
Nishioka, K. Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**
Niskode, P. M. Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**
Nitric Oxide
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) (A) **O 98**
Nitrogen Limitation
Effect of Nitrogen Limitation on Metabolic Activities of Activated Sludge (76-ENAs-40) (A) **O 97**
Nitrogen Oxide
High NO_x from Coal-Derived Fuels (BTR) **Jl 50**
Modifications to Ormond Beach Steam Generators for NO_x Compliance (75-WA/Pwr-9) (A) **F 86**
Nitrogen Oxide Combustors
Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **Jl 87**
Nitrogen Oxide Correlations
A Critical Review of NO_x Correlations for Gas Turbine Combustors (75-WA/GT-7) (A) **F 80**
A Simple Gas Turbine Combustor NO_x Correlation Including the Effect of Vitiated Air (76-GT-5) (A) **Jl 86**
Nitrogen Oxide Emissions
A Correlation of Nitrogen Oxides Emissions with Gas Turbine Operating Parameters (76-GT-14) (A) **Jl 88**
A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**
The Effects of Test Procedures on the Interpretation of NO_x Emission Data from a Gas Turbine (75-WA/APC-9) (A) **Je 113**
Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**
Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (A) **F 80**
NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**
Noble Metals
Thermal Radiative Properties of the Noble Metals of Cryogenic Temperatures (76-HT-6) (A) **O 98**
Noble, S. L. An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**
Noerager, J. A. An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**
Noise
Combustion Noise in Industrial Burners (75-WA/Fu-5) (A) **My 94**
Noise and the Braking Reflex (BTR) **Je 63**
Noises of Failure (BTR) **My 56**
Noise Abatement
Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**
Noise Behavior
Noise and Behavior (BTR) **Jl 49**
Noise Characteristics
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**
Noise Control
The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) (A) **My 95**
Meeting OSHA Noise Criteria in a Central Utility Plant of a Large Manufacturing Facility (75-WA/SAF-2) (A) **Je 117**
Recognition and Reduction of Hearing Damage Risk During Farm Operations (75-WA/SAF-3) (A) **Je 117**
Noise Emissions
Shape and Frequency Composition of Pulses From an

Impact Pair (76-DET-36) (A) **N 100**

Noise Exposure Control
Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) (A) **F 85**

Noise Generation
Wood Planar Noise (75-WA/PID-6) (A) **My 97**

Noise Pollution
Undergraduates Study Noise (EN) **D 74**

Noise Reduction
Advanced Acoustic Nacelle Concepts (76-GT-35) (A) **Jl 90**
Status Report—Subsonic Aircraft Noise Reduction (76-GT-116) (A) **Ag 91**

Noise Sources
Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

Noise Technology
Noise Technology Requirements for Future Aircraft Powerplants (76-GT-69) (A) **Jl 95**

Noise-to-Impact Spectra
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) (A) **N 102**

Nolle, H. Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**

Nomographs
Brief Survey of Spring Design Nomographs (76-DET-77) (A) **D 94**

Non-Axisymmetric Flow
Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**

Nondestructive Evaluation
NBS Nondestructive Evaluation Program (BTR) **Jl 44**

Nonferrous Materials
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**

Nonlinear Difference Equations
Behavior of Dynamic Systems Governed by a Simple Nonlinear Difference Equation (75-WA/APM-21) (A) **Je 121**

Nonlinear Expanders
Nonlinear Expanders for Diesel-Cycle Application—Part I: An Introduction to Geometric Concepts and Analysis (76-DGP-15) (A) **Ag 98**; Part II: Temporal Effects (76-DGP-16) (A) **Ag 99**; Part III: Design Considerations (76-DGP-17) (A) **Ag 99**

Nonlinear Mathematical Models
A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**

Nonlinear Oscillators
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-36) (A) **O 105**

Nonlinear Spatial Instability
Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**

Nonlinear Structural Dynamics
On the Unconditional Stability of an Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**

Nonlint Particles
Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) (A) **Ja 125**

Nonsymmetric Buckling
Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**

Nonsynchronous Instability
Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**

Nonverbal Communication
Nonverbal Communication in Engineering Teams or How to Read an Engineer Like a Slide Rule (75-WA/Mgt-1) (A) **Ap 96**

Normal Injection Holes
Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **Jl 96**

North, P. The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**

North, W. P. T. A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**

Norton, D. M. Modifications to Ormond Beach Steam Generators for NO_x Compliance (75-WA/Pwr-9) (A) **F 86**

Notch Toughness
The Effect of Electrode Manipulation on Deposit Notch Toughness (75-WA/PVP-18) (A) **Ap 98**

Nouse, H. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**

Novak, G. E. Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**

Novak, R. A. A Nearly Three-Dimensional Intrablade Computing System for Turbomachinery—Part I: General Description (76-FE-19) (A) **Ag 96**; Part II: System Details and Additional Examples (76-FE-20) (A) **Ag 96**

Novick, A. S. An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **Jl 88**

Novotny, J. L. An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**

Nozzle Design
Nozzle Design for ASME Code Requirements (76-PVP-20) (A) **D 100**

Nozzles
Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

Nozzle-to-Cylinder Intersections
Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

NRC
see **Nuclear Regulatory Commission**

Nuclear Applications
Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**

Nuclear Compromise
Nuclear Compromise Needed (ES) **Ap 22**

Nuclear Controversy
A Region's Stand: How it Happened (C) **D 46**

Nuclear Economics
Nuclear Economics (ES) **Ag 18**

Nuclear Energy
Advanced Nuclear Energy Systems **My 82**
Japan's "Nuclear Allergy" (BTR) **Ap 51**
Light from the Atom (BTR) **Ja 38**
More Fossil than Nuclear? (ES) **O 18**
Nuclear Energy Advancement (NR) **F 56**
Nuclear Power Expansion (IF) **Ap 64**
On Plutonium's Risks (C) **Ag 41**

Nuclear Energy Crisis
Primer on NUKES (EN) **F 58**

Nuclear Engineering
An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**
Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**
LMFBR Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**
Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View (75-WA/NE-4) (A) **F 78**
The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors (75-WA/NE-7) (A) **F 79**
Ten Years' Maintenance Experience at EBR-II (75-WA/NE-3) (A) **F 78**
Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**

Nuclear Excursion
Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup (75-WA/HT-30) (A) **Ap 103**

Nuclear Fuels
Annual Risk to Humans from Nuclear, Coal, and Oil Fuel Cycles for a 1000-MW Plant (ES) **D 16**
Nuclear Fuel Aboard Viking (BTR) **Ag 44**
Wrapping Up the Nuclear Fuel Cycle—Part 1: Reprocessing Nuclear Power's Spent Fuel **D 32**

Nuclear Generating Plants
Monticello Nuclear Plant Radwaste System Operating Experience (75-Pwr-24) (A) **Ja 113**

Nuclear News
Negative Nuclear News (ES) **Ap 22**

Nuclear Pipe Elbows
Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**

Nuclear Piping
Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**

Nuclear Plants
California Nuclear Initiative (C) **F 39**
S&W's Second Standard Nuclear Plant (ES) **N 14**
Speeding Nuclear Plant Construction (ES) **S 18**

Nuclear Power
Does Nuclear Power Fit In? (ES) **F 14**
Nuclear Notes (C) **My 41**
Nuclear Nudges Forward (ES) **My 17**
Nuclear Power: More Than A Technological Issue **F 32**
Nuclear Vs. Alternative Energy Sources (ES) **Mr 19**
Solicited Signatures Support Nuclear Power and Coal (NR) **Mr 65**
Surprised at Dissent (C) **Jl 40**
Voters Say "Yes" to Nuclear Power (ES) **D 16**

Nuclear Power Industry
TEMA and the Nuclear Power Industry (75-Pwr-17) (A) **Ja 112**

Nuclear Power Plants
Advanced Control Center for Nuclear Plants (BTR) **Ag 50**
Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants (75-Pwr-15) (A) **Ja 112**
Nuclear Power Plant Construction and the Public Safety (75-WA/TS-5) (A) **Mr 94**
Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**
Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**
Small Reactors + Helium Turbines = Near-Term Energy Savings **S 45**

Nuclear Quality Assurance
ASME Committee on Nuclear Quality Assurance **Je 124**

Nuclear Reactor Vessels
Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients (75-WA/PVP-3) (A) **Ap 97**

Nuclear Reactors
Design of a Nuclear Reactor Pressure Vessel and Closure Head for Maritime Application (76-PVP-2) (A) **D 97**
Gaseous Nuclear Core Reactor (BTR) **Jl 51**

Nuclear Regulatory Commission
Standard Nuclear Plant Approved (ES) **Ag 18**

Nuclear Reliability
Fossil vs. Nuclear Reliability (BTR) **Mr 54**

Nuclear Standards
What's Wrong With Nuclear Standards Makers? (ES) **F 14**

Nuclear Tracks
Nuclear Tracks in Solids: Principles and Applications (CB) **F 89**

Nuclear Valves
Manufacturing Nuclear Valves **Mr 38**

Nucleate Boiling
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**

Numerical Algorithms
A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

Numerical Computations
Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**

Numerical Control Systems
Manufacturing Nuclear Valves **Mr 38**

Numerical Methods
A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**

Numerical Simulations
Numerical Simulation of the Effect of Climatic Conditions on Heat Transfer from a Building (76-HT-71) (A) **N 90**

Nunziato, J. W. Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) (A) **S 99**

Nypan, L. J. Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

O

Oberkampf, W. L. Numerical Study of the Velocity and Temperature Fields in Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**

Obidinski, E. S. Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **Jl 87**

Obituaries
Barker, Joseph Warren (1891–1975): Engineer, Educator, Executive, Past-President, ASME **My 93**
Oblong Cylinders
Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**
O'Brien, J. J. *(author)* Value Analysis in Design and Construction (CB) **O 106**
O'Brien, V. Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**
Occupational Safety and Health Administration
New OSHA Targets (NR) **Mr 68**
OSHA Warns of Possible Cancer Hazards in Labs (EN) **Ap 73**
Ocean Energy Sources
Power, Fresh Water, and Food from the Sea **S 27**
Ocean Engineering
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) (A) **Ap 91**
Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**
Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**
Current Profile Energy and Ocean Moorings (75-WA/OcE-5) (A) **Ap 91**
On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) (A) **Ap 90**
Development of a Response Monitoring System and Application to a Barge (75-WA/OcE-10) (A) **Ap 91**
A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) (A) **Ap 91**
Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**
The Gravity Structure: Its Merits and Economics (75-WA/OcE-9) (A) **Ap 91**
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) (A) **Ap 91**
Power Turbines for Ocean Thermal Energy Conversion Systems (75-WA/OcE-11) (A) **Ap 92**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**
Superconductive Propulsion Motor Development at NSRDC (75-WA/OcE-8) (A) **Ap 91**
Ocean Farming
Farming the Ocean (ES) **Jl 16**
Ocean Technology
Canada Ocean Technology (IF) **Ja 50**
On Protecting the Oceans (NB) **Ag 60**
Ocean Thermal Energy Conversion
Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**
Oceanography
Chemical Oceanography (CB) **Ag 104**
Oda, T. Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**
Odgers, J. Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**; Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**; Jet Mixing as Defined by Water Models (75-WA/GT-2) (A) **F 80**; The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **Jl 86**
O'Donnell, W. J. Elections to Fellow Grade **D 90**; Plastic Strain Concentrations in Ligaments (76-PVP-32) (A) **D 101**
O'Donohue, J. K. Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**
Oenjin, J. S. The Potential of Oxide Dispersion Strengthened Superalloys for Advanced Gas Turbines (76-GT-118) (A) **Ag 91**
Office Buildings
Opportunities for Energy Conservation in Office Buildings (76-HT-70) (A) **N 89**
Office of Safety & Health Administration
Unscrambling OSHA (TL) **Ag 106**
Offner, D. H. Determining of Pivot Locus for Pivoted Motor Belt Drives (75-WA/DE-29) (A) **Mr 107**
Offner, W. W. Nuclear Notes (C) **My 42**; Nuclear Power Plant Construction and the Public Safety (75-WA/TS-5) (A) **Mr 94**
Offshore Design
Complacency in Offshore Design (BTR) **Jl 48**
Offshore Drilling
Onshore Effects of Offshore Drilling (ES) **S 19**
Offshore Floating Platforms
A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platform (75-WA/OcE-4) (A) **Ap 91**
Offshore Oil Platforms
Durable Paint Job (BTR) **D 50**
Offshore Oil Production
The Growing Market for Commercial Submarines **O 28**
Offshore Technology
North to Alaska (NR) **Jl 56**
Ogive Film Cooling
An Experimental Investigation of Ogive Film Cooling (76-ENAs-39) (A) **O 97**
O'Grady, W. E. Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**
Oh, K. P. A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) (A) **S 96**; A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) (A) **S 100**
Oh, S. I. Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) (A) **Mr 101**
O'Hara, J. B. Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**
Ohtsubo, H. Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**
Oil
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**
From Oil to Coast (ES) **Ap 23**
Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) (A) **S 98**
Oil Bearings
Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**
Oil Crisis
The Oil Crisis (CB) **S 103**
Oil Emulsions
The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**
Emulsions as Fuels (75-WA/Fu-3) (A) **My 95**
Oil Fields
Automatic Nondestructive Testing of Oil Field Tubular Goods (75-Pet-42) (A) **Ja 117**
Oil Film
Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**
Oil Film Dampers
Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) (A) **F 83**
Oil Furnace
Comeback for the Coal Furnace (BTR) **Mr 55**
Oil Imports
Trouble Ahead? (C) **My 41**
Oil Jets
Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) (A) **Ja 121**
Oil Land Leasing
OILSIM—A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**
Oil Lubrication
The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**
Oil Pollution
Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**
Oil Production
Oil Production Versus Reserves, and Prices (ES) **Ag 18**
The Sheikh's Story and a Global View of Energy (EN) **Jl 64**
Oil Recovery System
Sea Broom: Oil-Absorbent Chips (BTR) **Mr 55**
Oil Refineries
Cracking Down: Oil Refining and Pollution Control (CB) **D 107**
New UA Refinery (IF) **S 63**
Oil-Refrigerant Mixtures
An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**
Oil Resources
Results Produced by a Technology Assessment of OCS Oil and Gas Resources (75-WA/TS-6) (A) **Mr 94**
Oil Skimmer
Oil on Troubled Waters (C) **My 41**
Oil Slick Removal
Oil Slick Removal System (IF) **S 62**
Oil Spill Cleanup
Cleanup Questioned (C) **Je 46**
Oil Spills
New Twist for Oil Spill Cleanup **F 28**
Oil Spill Training Program (EN) **F 60**
Oil Whip
Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**
Oil-Free Screw Compressor
Oil-Free Screw Compressor (BTR) **Ag 52**
Oils
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**
OILSIM
OILSIM-A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**
Okabayashi, K. Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**
Oker, E. Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
Okugawa, R. Evaluation of Improved Cycles for Marine Application of An Aircraft Derivative Gas Turbine (76-GT-114) (A) **Ag 91**
Oliker, I. On Calculation of Heat and Mass Transfer in Jet Type Direct Contact Heaters (76-HT-21) (A) **O 100**
Oliver, L. R. V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**
Olson, C. A. Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78) (A) **My 105**
O'Neill, W. D. Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**
One-Sided Constraints
Steady Solutions for Moving Loads on Elastic Beams With One-Sided Constraints (75-WA/APM-30) (A) **Jl 99**
On-the-Job Accidents
Who Is Responsible for On-the-Job Accidents? (NB) **Je 78**
Oosthuizen, P. H. Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**; Experimental Study of Combined Convective Heat Transfer from "Oblong" Cylinders to Air (76-HT-40) (A) **O 102**; Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**; A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**; Numerical Study of Some Three-Dimensional Laminar Free-Convective Flows (76-HT-34) (A) **O 101**
Opaque Liquid Sodium
Transparently Opaque (BTR) **Ap 54**
Opaque Substrates
The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**
Open Channels
A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**
Open-End Cotton Yarns
The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**
Open-End Spinning
Some Specific Problems and Findings in Open-End Spinning (76-Tex-8) (A) **N 96**
Open-End Spintester
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**
Open-End System
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**
Openshaw, F. Control of a Gas Turbine HTGR (76-GT-97) (A) **Jl 98**
Optical Interference Methods
An Optical Interference Method for Studying the Lubrication of a Compliant Bearing (76-LubS-3) (A) **S 95**

Optical Roughness
Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**
Optical Scanning
Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**
Optimal Bolt Preload
On Optimal Bolt Preload (75-WA/DE-14) (A) **Mr 14**
Optimal Control
Maximizing Distance of the Golf Drive: An Optimal Control Study (75-WA/Aut-12) (A) **Ap 94**
Optimal Control Algorithm
The Fuel-Saving Potential on Cars with Continuously Variable Transmissions and an Optimal Control Algorithm (75-WA/Aut-20) (A) **Ap 95**
Optimality
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**
Optimization
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**
The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**
Optimum Design
Optimum Design of a Complex Planar Mechanism (76-DET-47) (A) **N 101**
Optimum Duct Acoustic Liners
Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**
Optimum Pressure Ratios
Approximately Calculating Optimum Pressure Ratios for Various Gas Turbine Cycles (76-GT-21) (A) **Jl 89**
Optimum Sensors
Optimum Sensor Location in Transient Calorimeters (76-HT-63) (A) **N 89**
Organism Support
Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**
Orientation Devices
Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**
Orifice Plates
Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**
Orifices
Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**
Orlandea, N. A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**
Ormsby, P. A. Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**
Or/Nor Gates
Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate (75-WA/Flcs-8) (A) **Je 115**
Orthogonal Curvilinear Coordinates
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (75-WA/HT-95) (A) **My 107**
A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**
Osborne, C. A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**
Oscillating Cascades
An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **Jl 88**
Oscillators
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-36) (A) **O 105**
Oscillatory Cavity Flows
Unsteady Cavity Flows: Oscillatory Flat Box Flows (75-WA/APM-1) (A) **Je 119**
Oscillatory Flow
An Investigation of Momentum and Heat Transport in Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) (A) **Ap 99**
Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**
Osman, M. O. M. On the Design of Bolted Connections With Gaskets Subjected to Fatigue Loading (76-DET-57) (A) **N 103**; Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DEt-51) (A) **N 102**
Osmosis
Pressure Retarded Osmosis (BTR) **Mr 51**
Ostrander, J. Still More on Nader (C) **Je 48**
Othmer, D. F. Power, Fresh Water, and Food from the Sea **S 27**
Outages
Supercritical Unit Availability Six-Year Case History (75-Pwr-25) (A) **Ja 113**
Outer Continental Shelf
Results Produced by a Technology Assessment of OCS Oil and Gas Resources (75-WA/TS-6) (A) **Mr 94**
Outlet Nozzles
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Out-of-Plane Loading
Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) (A) **Mr 104**
Ovalization
Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**
Overpressure Conditions
Analysis of Overpressure Conditions in an Isolated Piping Section (76-PVP-8) (A) **D 98**
Owczarek, J. A. Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**
Ovens, W. G. Metal Flow in Two-Die Swaging (75-WA/Prod-23) (A) **Ap 104**
Owen, R. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**
Oxide Dispersion
The Potential of Oxide Dispersion Strengthened Superalloys for Advanced Gas Turbines (76-GT-118) (A) **Ag 91**
Oxycarbides
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**
Oxygen Breathing Devices
Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**
Oxygen Electrocatalysts
Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**
Oxygen Generating System
Development of an On-Board Oxygen Generating System (76-ENAs-9) (A) **O 93**
Oxygen Generation
Integrated Testing of an Electrochemical Depolarized CO Concentrator (EDC) and a Bosch CO Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**
Oxygen Process
Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**
Ozgu, R. Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**

P

PACE Control System
Field Experience with the Pace Control System (76-GT-106) (A) **Ag 90**
PACE 260 at Comanche, the First Two Years (76-GT-109) (A) **Ag 91**
Pacemakers
More and Better Pacemakers (BTR) **S 52**
Pacey, A. *(author)* The Maze of Ingenuity: Ideas and Idealism in the Development of Technology (CB) **Ja 127**
Package Boilers
The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
Packaging
Packaging of Gas Turbines Type 7 and Type S 7 (76-GT-20) (A) **Jl 88**
Packauri, R. K *(author)* The Dynamics of Electrical Energy Supply and Demand: An Economic Analysis (CB) **Je 123**
Packed Plunger Metering Pumps
Packed Plunger Metering Pumps (BTR) **O 54**
Paddle-Wheel Oil Skimmer
Oil on Troubled Waters (C) **My 41**
Padovan, J. Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) (A) **S 98**
Pagano, L. Review of the Office of Technology Assessment Activities (75-WA/TS-4) (A) **Mr 94**
Page, G. T. *(author)* International Dictionary of Management: A Practical Guide (CB) **Je 123**
Pagel, P. A. The Building Block Method of Cam Design (76-DE-36) (A) **S 92**
Pahler, R. H., Jr. Design of a Fiber Optic Pressure Transducer (75-WA/DE-8) (A) **Mr 105**
Pai, D. H. Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**; Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**
Paidousis, M. P. Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **Jl 99**
Paidoussis, M. P. Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
Painter, G. W. Advanced Acoustic Nacelle Concepts (76-GT-35) (A) **Jl 90**
Palazotto, A. N. Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**; A Singularity Approach to Circular Plates (76-DE-28) (A) **S 91**
Palme, H. S. Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**
Palmer, R. J. Modern Gas Turbines for Low Btu Gas Fuel Operation (76-GT-117) (A) **Ag 91**
Palmer, R. S. An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**
Pamidi, P. R. Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**; Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**; On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**
Pan, K. C. A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**
Panamerican Federation of Engineering Societies
14th Convention of the Panamerican Federation of Engineering Societies (UPADI), preview (NR) **Ap 68**
Panarelli, J. E. A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**
Pandey, P. C. On Work Rests While Turning Slender Jobs (75-WA/Prod-21 (A) **Mr 103**
Pandit, S. M. A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) (A) **Mr 102**
Panjabi, M. M. Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**
Papadakis, C. N. Transient Analysis of Air Vessels and Air Inlet Valves (76-FE-28) (A) **S 95**
Papailiou, K. Secondary Flows in Compressor Bladings (76-GT-57) (A) **Jl 93**
Paper Feed Control System
High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**
Paper Recycling
Paper Recycling Stands Still (NB) **D 72**
Papworth, M. L. *(author)* The Pegasus Unit: Petroleum/Gasoline Substitute Systems (CB) **Ap 107**
Paquin, J. R. *(author)* Fractions to Millimeters (CB) **Je 123**
Paradis, M. A. Film Cooling of Gas Turbine Blades. A Study of the Effect of Large Temperature Differences on Film Cooling Effectiveness (76-GT-2) (A) **Jl 86**
Paraffinic Hydrocarbons
Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**
Parallel Annuli
FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**
Parallel Flow
Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**
Parallel Plate Ducts
The Numerical Prediction of the Turbulent Flow and Heat

Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**

Parallel Plates
Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**

Parallel Sliding
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**

Parallelograms
A Parallelogram Chain Mechanism for Measuring Human Joint Motion (76-DET-71) (A) **D 94**

Parametric Analysis
Parametric Analysis of a Centrifugal Fluidized Bed Coal Combustor (76-HT-68) (A) **N 90**
A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Parametric Instability
Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **Jl 98**

Parametric Resonances
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **Jl 99**

Parametric Studies
Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**

Parametric Tests
Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Parfitt, A. W. Rehabilitation of the Towers and Vessels of the Glace Bay Heavy Water Plant (76-PVP-68) (A) **D 105**

Parikh, N. M. Chemical Effects of Lubrication in Contact Fatigue, Part 1: (75-Lub-43) (A) **Ja 123**; Part 2: (75-Lub-44) (A) **Ja 124**

Parin, M. L. Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element Techniques (76-GT-60) (A) **Jl 94**

Park, W. H. A Human Model for Measuring Ride Quality **Jl 30**

Parker, C. W. Elections to Fellow Grade **O 91**

Parker, R. P. High Frequency Response of Beams (75-WA/APM-18) (A) **Je 120**

Parkman, M. F. Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breed Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**

Parnell, C. B., Jr. Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**

Parson, W. N. Risk Management Technique for Design and Operation of Facilities and Equipment (75-WA/Aero-5) (A) **My 98**

Parsons, B. A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**

Parsons, R. E. Railroad Research: The Changing Emphasis **Ap 29**

Parsons, W. N. Using RMS Techniques for Designing RMS* and Operating Hazardous Facilities **N 21**

Particle Measurements
Particle Measurements for Textile Airborne Process Waste Control (76-Tex-9) (A) **N 96**

Particle Size Analysis
Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**

Particle Size Distributions
Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**
Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**

Particulate Beds
Dryout Heat Fluxes for Inductively Heated Particulate Beds (75-WA/HT-19) (A) **Ap 101**

Particulate Emissions
The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**
The Reduction of Particulate Emissions from Industrial Boilers by Combustion Optimization (75-WA/APC-3) (A) **Je 112**

Part-Through Cracks
Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**

Pascal
Made for Each Other (C) **My 45**

Paschkis, V. Letter Writer Correct (C) **Ap 49**

Pasley, P. R. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Passenger Transportation
A Review of Short Haul Passenger Transportation (CB) **D 107**

Passerllo, C. E. An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**

Passive Components
Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**
Analysis of Active-Passive Motion Compensation Systems for Marine Towing Appplications (75-WA/OcE-13) (A) **Ap 92**

Passive Refrigeration
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**

Patchlike Contact
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Patel, A. S. Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**

Patel, B. M. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) (A) **Ja 125**

Patent Awareness Program
Professors: Publicize Research Results (NB) **D 72**

Patent Infringement
Weighing the Risk of Patent Infringement (76-DE-1) (A) **Ag 99**

Patrick, J. W. Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**

Patterson, J. D. Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**

Patterson, H. B. Nuclear Reactions (C) **Ap 47**

Patterson, R. C. The Combustion Engineering Coal Gasification Program (75-Pwr-8) (A) **Ja 111**

Patterson, W. N. Recognition and Reduction of Hearing Damage Risk During Farm Operations (75-WA/SAF-3) (A) **Je 117**

Patton, R. E. Gas Turbine Operation in Extreme Cold Climates (76-GT-127) (A) **Ag 93**

Patton, W. J. *(author)* Materials in Industry (CB) **Ap 107**

Patwardhan, A. G. Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**

Paul, G. R. A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**

Paulard, M. Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element Techniques (76-GT-60) (A) **Jl 94**

Paulon, J. Design of an Annular Channel for Testing Highly Loaded Compressor Blades: Comparison Between Theory and Experiments (76-GT-79) (A) **Jl 96**

Paulus, H. J. A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**

Pavelic, V. A Design Program Including Theory and Practice (76-DE-31) (A) **S 91**; New Directions for Adhesive Usage (76-DE-15) (A) **S 90**

Payload Bay Doors
The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**

Payne, D. The Gravity Structure: Its Merits and Economics (75-WA/OcE-9) (A) **Ap 91**

Peacy, J. A Psychrometric Method for Determining Water Vapor in Flue Gas (75-WA/APC-8) (A) **Je 113**

Pebble Bed Storage
A Method of Simulating the Performances of a Pebble Bed Thermal Energy Storage and Recovery System (76-HT-73) (A) **N 90**

Pech, K. N. Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**

Peerless, S. J. Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**

Pegasus Unit
The Pegasus Unit: Petroleum/Gasoline Substitute Systems (CB) **Ap 107**

Pekar, F. J. Integral Air-to-Air Intercooling: A New Way to Improve Fuel Economy, Gaseous Emissions, and Increase Output (76-DGP-12) (A) **Ag 98**

Pelton, H. K. Meeting OSHA Noise Criteria in a Central Utility Plant of a Large Manufacturing Facility (75-WA/SAF-2) (A) **Je 117**

Penetration Patterns
Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Pension Reform
Pension Reform (C) **Jl 42**

Pension Plans
Everything You Should Know About Pension Plans (CB) **D 106**

Pensions
Pensions: Helping Engineers Get Their Due (PS) **My 73**

Peracchio, A. A. Noise Technology Requirements for Future Aircraft Powerplants (76-GT-69) (A) **Jl 95**

Perforated Plates
Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Perforations
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**; Part 2—Heat Transfer and Flow Friction Characteristics (75-WA/HT-9) (A) **Ap 100**

Performance Test Codes
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**
Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) (A) **My 97**

Perham, R. E. An Analytical Study of a Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**

Periodic Loadings
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Peripheral Equipment
High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**

Perlee, H. E. Flame Spread in a Duct Fire (76-HT-56) (A) **O 104**

Permafrost
Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) (A) **Ja 117**

Permafrost Behavior
The Surface Heat Balance in Simulations of Permafrost Behavior (75-WA/HT-86) (A) **My 105**

Perr, J. P. The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**

Perso, J. C. A Vibration Isolation Strategy for Small Engines with Unbalance at One-Third Operating Speed: The Wankel (76-DE-27) (A) **S 91**

Perturbational Stability
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) (A) **Ap 96**

Peterkin, M. E. Infrared Emission Spectra of Elastohydrodynamic Contacts (75-Lub-10) (A) **Ja 119**

Peters, R. M. Flow Measuring Devices (76-DE-23) (A) **S 90**

Petrochemical Plants
New Petrochemical Center (IF) **F 52**

Petroleum
The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) (A) **My 95**
Acoustical Energy Decay in Piping Systems (75-WA/Pet-6) (A) **My 95**
Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**
Automatic Nondestructive Testing of Oil Field Tubular Goods (75-Pet-42) (A) **Ja 117**
Casing Collapse Performance (75-Pet-41) (A) **Ja 117**
Cementing Research in Directional Gas Well Completions (75-Pet-30) (A) **Ja 116**
Development of the Single Anchor Leg Mooring (75-Pet-44) (A) **Ja 117**
Development of a Technique to Provide a Predictable Solids Separation with the Rotary Mud Separator (75-Pet-31) (A) **Ja 116**

Disposal of Dredged Material—A Key Environmental Consideration in the Construction of Major Nearshore and Coastal Marine Facilities (75-WA/Pet-7) (A) **My 95**
The Effect of Casing Wear on the Burst Strength of Casing (75-Pet-27) (A) **Ja 115**
Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**
The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**
The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy (75-WA/Pet-3) (A) **My 95**
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**
OILSIM-A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**
Practical Aspects of Plate Testing (75-Pet-48) (A) **Ja 118**
Prediction of Toughness Behavior Using Precracked Charpy Specimens (75-Pet-25) (A) **Ja 115**
A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula (75-Pet-29) (A) **Ja 116**
Re-analysis of Cruciform Specimen Fatigue Results by Statistical Methods (75-Pet-46) (A) **Ja 118**
Research Tests (75-Pet-47) (A) **Ja 118**
Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) (A) **Ja 117**
Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**
Steam Turbine Diaphragm Failure (75-Pet-49) (A) **Ja 118**
Techniques for Gravel Packing Abnormally Pressured Unconsolidated Reservoirs (75-Pet-37) (A) **Ja 117**
Testing of Forgings (75-Pet-43) (A) **Ja 118**
Total Gas Containment System (75-Pet-32) (A) **Ja 116**
Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**
Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**
Wind-Powered Electric Utility Plants (75-WA/Pet-1) (A) **My 95**

Petroleum Exploration
Decision Analysis for Petroleum Exploration (CB) **N 105**

Petroleum Fuels
The Outlook for Petroleum Power Plant Fuels (76-IPC-Pwr-6) (A) **S 93**

Petroleum Measurement Systems
Large Capacity Petroleum Measurement Systems (75-WA/FM-3) (A) **Je 118**

Petroleum Refineries
Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**

Petroleum Substitute Systems
The Pegasus Unit: Petroleum/Gasoline Substitute Systems (CB) **Ap 107**

Pfaffenberger, E. E. A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**

Pfefferle, W. C. CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**

Phadke, M. S. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**

Pharmacokinetic Systems
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) (A) **Ap 93**

Phase-Changing Media
Computer-Aided Design Analysis and Selection of Heat Exchanger with Phase-Changing Media (75-WA/PID-5) (A) **My 97**

Phased Cooling
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**

Phillips, C. F. Engineering Biological Evaluation of the Work Environment (75-WA/SAF-4) (A) **Je 117**

Philips, D. W. Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) (A) **D 97**

Philosophers
Philosophers and Machines (CB) **Jl 100**

Photosynthesis
New Kind of Photosynthesis (BTR) **Je 60**

Pierce, F. E., Jr. OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**

Pile Supports
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**

Pillsbury, P. W. Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Pilot Plants
Bi-Gas Pilot Plant's Ready for Action (ES) **N 14**

Pimentel, K. D. Toward a Mathematical Theory of Environmental Monitoring (75-WA/Aut-7) (A) **Ap 93**

Pinkel, B. *(author)* The Existential Adventure: The Roles of Science and Belief (CB) **Ag 103**

Pinkus, O. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) (A) **Je 108**; The Hydrodynamics of a Plug Bearing (75-Lub-36) (A) **Ja 122**

Pinotti, P. C. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**

Pipe Bends
Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**

Pipe Elbows
Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**

Pipe Erosion
Pipe Erosion Problem in Coal Gasification (BTR) **O 60**

Pipe Flow
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**

Pipe Insulation
Fiber Glass Pipe Insulation to 650° F (BTR) **Mr 48**
Pipe Insulation as Energy Conserver (BTR) **Ag 45**

Pipe Joints
Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**

Pipe Pressures
Fracture in Straight Pipes Under Large Deflection Conditions—Part II: Pipe Pressures (76-PVP-14) (A) **D 99**

Pipe Wrapping Systems
Acoustic Transmission of Pipe Wrapping Systems (75-WA/Pwr-7) (A) **F 85**

Pipelaying
Position Control of Pipelaying Barges (75-WA/Aut-18) (A) **Ap 95**

Pipeline Bifurcation
Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**

Pipelines
Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Pipes
An Experimental Study on the Instability Induced by Voiding from a Horizontal Pipe Line (75-WA/HT-20) (A) **Ap 101**
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **Jl 99**

Piping
The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**
Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-48) (A) **D 103**

Piping Systems
Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**
The Acoustic Performance of Pipe Lagging Systems (75-WA/Pet-2) (A) **My 95**
Acoustical Energy Decay in Piping Systems (75-WA/Pet-6) (A) **My 95**

Piston Type Loads
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**

Pivot Locus
Determining of Pivot Locus for Pivoted Motor Belt Drives (75-WA/DE-29) (A) **Mr 107**

Pivoted Pad Bearings
Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Planar Flow Models
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**

Planar Linkages
Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**
KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) (A) **N 101**

Planar Mechanisms
Design and Analysis of Multilink Flexible Mechanisms With Multiple Clearance Connections (76-DET-9) (A) **N 97**
Mixed Exact-Approximate Planar Mechanism Position Synthesis (76-DET-29) (A) **N 99**
Optimum Design of a Complex Planar Mechanism (76-DET-47) (A) **N 101**
Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**
Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**

Planar Motion
On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**

Plane Bending
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**

Plane Harmonic Waves
Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **Jl 98**

Plane Jets
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) (A) **Je 108**

Plane Strain Sectors
Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**

Plane Waves
Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

Planes
Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**

Planet Bearings
Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) (A) **Ja 121**

Planetary Acceleration
A Mechanical Device for Detecting and Functioning in a Planetary-Type Acceleration Field (76-DET-72) (A) **D 93**

Planetary Gears
Design and Development of High Horsepower Marine Planetary Gears (76-GT-28) (A) **Jl 90**

Planetary Research
Vast Lava Flow on Venus (BTR) **D 51**

Plant Cooling Systems
Start with Nature (ES) **D 16**

Plant Design
Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View (75-WA/NE-4) (A) **F 78**

Plant Engineering
Inside Plant Engineering (EN) **Ag 62**

Plants
Scavenger Plants (BTR) **Je 58**

Plastic Containers
Plastic Can (BTR) **Jl 46**

Plastic Deformation
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**
A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials

(75-Lub-33) (A) **Ja 122**

Plastic Failure
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**

Plastic Flow
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**

Plastic Indentation
Analysis and Design of Disposable Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**

Plastic Properties
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**

Plastic Springs
Reinforced Plastic Springs (BTR) **N 50**

Plastic Strain Concentrations
Plastic Strain Concentrations in Ligaments (76-PVP-32) (A) **D 101**

Plastic Structural Dynamics
On an Extremum Principle for Mode Form Solutions in Plastic Structural Dynamics (75-WA/APM-6) (A) **Je 119**

Plasticity
A Practical Two Surface Plasticity Theory (75-WA/APM-12) (A) **Je 120**

Plastics
Information Sources for Plastics (76-DE-16) (A) **S 90**
Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**

Plastics Recycling
Plastics Recycler (IF) **N 57**

Plate Rupture
Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**

Plate Testing
Practical Aspects of Plate Testing (75-Pet-48) (A) **Ja 118**

Plates
Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) (A) **Mr 105**
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) (A) **S 100**
Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) (A) **S 99**
Dynamics of Initially Stressed Plates (76-APM-29) (A) **S 101**
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**
Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**
Nonlinear Spatial Instability of a Film Coating on a Plate (75-WA/APM-13) (A) **Je 120**
A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**
A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**
A Singularity Approach to Circular Plates (76-DE-28) (A) **S 91**
Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
On the Use of Beam Functions for Problems of Plates Involving Free Edges (75-WA/APM-16) (A) **Je 120**

Platinum-Alumina
Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**

Plenum Air Cushion Suspensions
Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**

Plethysmographic Indicator
Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**

Plost, M. Waste Heat Utilization Through the Use of Heat Pipes (75-WA/HT-48) (A) **My 101**

Plotkin, A. Hydrodynamic Pressure Field on a Slender Ship Moving Over a High Frequency Wavy Shallow Bottom (76-APM-22) (A) **S 100**

Plug Bearings
The Hydrodynamics of a Plug Bearing (75-Lub-36) (A) **Ja 122**

Plumb, O. A. Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**

Plumes
The Characteristics of Thermal Plumes (75-WA/HT-64) (A) **My 103**
Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **Jl 87**

Plutonium
On Plutonium's Risks (C) **Ag 41**
To Use or Not to Use Plutonium (ES) **Ag 18**

Pneumatic Coupling
Dynamic Response of a Cam-Actuated Mechanism With Pneumatic Coupling (76-DET-35) (A) **N 100**

Pneumatic Sequential Control Circuits
A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits (75-WA/Aut-22) (A) **Ap 95**

Pneumatic Transmission Lines
Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion (75-WA/Flcs-4) (A) **Je 114**

Pneumatic Tubes
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**

Point Contacts
Isothermal Elastohydrodynamic Lubrication of Point Contacts, Part 1—Theoretical Formulation (75-Lub-11) (A) **Ja 119**; Part 2—Ellipticity Parameter Results (75-Lub-12) (A) **Ja 120**

Point Loading
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) (A) **Mr 104**

Poientz, L. M. Correspondence on Correspondence Course (C) **Jl 42**

Pollmann, E. Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**

Pollock, M. D. Nuclear Reactions (C) **Ap 48**

Pollutant Emissions
The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**
Field Measurements of Pollutant Emissions from Industrial Boilers (75-WA/APC-7) (A) **Je 113**

Pollutant Fingerprinting
Slick Sleuths (BTR) **Jl 47**

Pollutants
Flyash Helps Pollutants Escape (ES) **Ag 19**

Pollution
Congestion and How to Cope With It (BTR) **Ja 42**
Global Pollution Control Demands Rising (NB) **S 68**
Spreading Urban "Effluence" (BTR) **Mr 49**

Pollution Control
Cleaning Up: The Cost of Refinery Pollution Control (CB) **D 107**
Cracking Down: Oil Refining and Pollution Control (CB) **D 107**
Priorities in Pollution Control (NB) **Ja 59**

Pollution-Free Power
Pollution-Free Power at ANL (BTR) **N 51**

Polvanich, N. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**

Polvnicha, N. Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**

Polychlorinated Biphenyls
No More PCB (ES) **Mr 19**

Polycrystal Grit
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**

Polyethylene
Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**

Polynomial Regression Analysis
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperature in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**

Popeck, R. A. Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) (A) **F 85**

Popelar, C. Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Poppendiek, F. Some Heat Transfer Performance Criteria for High Temperature Fluid Systems (75-WA/HT-103) (A) **Je 116**

Porchet, F. Packaging of Gas Turbines Type 7 and Type S 7 (76-GT-20) (A) **Jl 88**

Porous Bearings
Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**

Porous Media
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**

Porous Surfaces
Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**

Porowski, J. S. Plastic Strain Concentrations in Ligaments (76-PVP-32) (A) **D 101**

Porpoise Fishing
Tuna-Porpoise Controversy (BTR) **D 52**

Positive Isolation Disconnect
The Development of a Positive Isolation Disconnect (76-ENAs-12) (A) **O 94**

Potassium Vapor Topping
Four Variations of a Potassium Vapor Topping Cycle (75-WA/Ener-3) (A) **Mr 96**

Potentiometers
Instrument Contact Spring Design Considerations (76-DE-44) (A) **S 93**

Potter, J. H. Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**

Potts, P. D. A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) (A) **N 101**

Povlis, J. A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**

Powars, C. A. Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**

Powder Metallurgy
Powder Metallurgy Processing of High Strength Turbine Disk Alloys (76-GT-96) (A) **Jl 98**

Powders
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**

Powell, J. A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 105**

Powell, J. R. High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**

Powell, R. D. Microprocessor Based Controls for Gas Turbines (76-GT-91) (A) **Jl 97**

Power
Power in an Accelerating Mechanism (76-DET-60) (A) **D 92**

Power Conversion
ERDA and the Advanced Power Conversion Program **My 24**
High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**

Power Cylinder Deactivation
Fuel Savings by Deactivating 8 Power Cylinders on a V-16 Engine (76-DGP-10) (A) **Ag 98**

Power Engineering
Acoustic Transmission of Pipe Wrapping Systems (75-WA/Pwr-7) (A) **F 85**
An Advanced Coal Gasification System for Electric Power Generation (75-Pwr-6) (A) **Ja 111**
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**
Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**
Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) (A) **F 85**
Automation of Multi-Generator Combined Cycle Plants (75-Pwr-23) (A) **Ja 113**

Beaver Plant-Conversion to Combined Cycle (75-Pwr-29) (A) **Ja 114**

The Combustion Engineering Coal Gasification Program (75-Pwr-8) (A) **Ja 111**

Comparison of Different Combinations of Wet and Dry Cooling Towers (75-WA/Pwr-10) (A) **F 86**

Considerations in Applying Current Construction Codes to Heat Exchangers in Nuclear Power Plants (75-Pwr-15) (A) **Ja 112**

Control and Automation of Single Generator Combined Cycle Plants (75-Pwr-18) (A) **Ja 112**

Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**

Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 86**

A Diffusion Limited Model That Accurately Predicts The NO_x Emissions From Gas Turbine Combustors Including The Use of Nitrogen Containing Fuels (75-Pwr-11) (A) **Ja 112**

Dresden Station Liquid Radwaste System Modifications (75-Pwr-26) (A) **Ja 113**

Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**

Dynamic Pressure Exchanger Performance Estimates (75-Pwr-1) (A) **Ja 110**

Emissions Characteristics of a Gas Turbine Combustor for High Nitrogen Content Fuels (75-Pwr-28) (A) **Ja 113**

A Forecast of Power Developments, 1975–2000 (75-Pwr-5) (A) **Ja 110**

Gas Turbine Emissions and Performance on Methanol Fuel (75-Pwr-22) (A) **Ja 113**

Gaseous Environmental Factors in Coal Pyrolysis Plant Design (75-Pwr-3) (A) **Ja 111**

A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications (75-Pwr-30) (A) **Ja 114**

Liquid and Solid Radwaste Experience at the Nine Mile Point BWR (75-Pwr-9) (A) **Ja 111**

Mechanical Drive Turbines and Energy Conversion for the 80's (75-WA/Pwr-1) (A) **F 85**

Minimizing Fuel Costs (75-WA/Pwr-13) (A) **F 86**

Modifications to Ormond Beach Steam Generators for NO Compliance (75-WA/Pwr-9) (A) **F 86**

Monticello Nuclear Plant Radwaste System Operating Experience (75-Pwr-24) (A) **Ja 113**

NO_x Emissions from Atmospheric Fluidized-Bed Boilers (75-Pwr-4) (A) **Ja 111**

Parametric Tests on Dual-Fuel Coal Gas/Distillate Oil Gas Turbine Combustors (75-Pwr-13) (A) **Ja 110**

Power Spray Cooling-Unit and System Performance (75-WA/Pwr-8) (A) **F 84**

Preliminary Thermal Analysis of Air-Storage Gas Turbine System (75-Pwr-20) (A) **Ja 112**

Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) (A) **F 85**

Radwaste System Startup and Operation, Three Mile Island Nuclear Station, Unit 1 (75-Pwr-14) (A) **Ja 111**

Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**

Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**

Supercritical Unit Availability Six-Year Case History (75-Pwr-25) (A) **Ja 113**

Systems Approach to R&D Planning for Energy/Environmental Interface (75-Pwr-2) (A) **Ja 110**

Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) (A) **F 85**

TEMA and the Nuclear Power Industry (75-Pwr-17) (A) **Ja 112**

The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation (75-Pwr-27) (A) **Ja 113**

Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**

Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**

Power Generation

Energy Cycles: Their Cost Interrelationship for Power Generation **Je 22**

Power Input

Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**

Power Loss

Approximate Calculation of Power Loss in Involute Gears (75-PTG-2) (A) **Ja 114**

Power Packs

52-Pound Power Pack (EN) **Mr 73**

Power Plant Construction

Nuclear Power Plant Construction and the Public Safety (75-WA/TS-5) (A) **Mr 94**

Power Plant Structures

Design Methods for Power Plant Structures (CB) **N 104**

Power Plants

Dead Sea to Become a Power Plant? (BTR) **Ag 53**

Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**

Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **Jl 93**

The Outlook for Petroleum Power Plant Fuels (76-IPC-Pwr-6) (A) **S 93**

Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **Jl 97**

Sizing a Cooling Pond for a Power Plant (75-WA/HT-63) (A) **My 103**

Status Report on Closed-Cycle Power Plants in the Federal Republic of Germany (76-GT-54) (A) **Jl 93**

Steels for Power Plants **Ja 26**

Waste Heat Management of Steam-Electric Power Plants (76-ENAs-44) (A) **N 91**

Power Products

Power Products Go Down and Up (ES) **Ja 11**

Power Ramp Tests

Performance Analysis of PWR Power Ramp Tests (75-WA/HT-68) (A) **My 103**

Power Ratings

V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**

Power Spray Cooling

Power Spray Cooling-Unit and System Performance (75-WA/Pwr-8) (A) **F 84**

Power Stations

An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A) **Ag 95**

Simulation of a Small Solar-Power Station (75-WA/Sol-4) (A) **Mr 93**

Power Transmission

Power Transmission via the Superconducting Cable **Ja 20**

Power Transmission and Gears

Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**

Approximate Calculation of Power Loss in Involute Gears (75-PTG-2) (A) **Ja 114**

Effect of Magnetic Field on Wear (75-PTG-5) (A) **Ja 114**

Grease Separation Under Centrifugal Forces (75-PTG-3) (A) **Ja 114**

Power Turbines for Ocean Thermal Energy Conversions Systems (75-WA/OcE-11) (A) **Ap 92**

Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**

Powers, P. W. *(author)* How to Dispose of Toxic Substances and Industrial Wastes (CB) **D 107**

Prabhakar, R. Optimization of Automotive Engine Fuel Economy and Emissions (75-WA/Aut-19) (A) **Ap 95**

Prandtl Numbers

Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**

Prasad, S. N. On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**

Pratap, V. S. Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**

Prause, R. H. Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**

Pre- and Post-Processors

Pre- and Post-Processors are Needed (CT) **Ja 68**

Prealloyed Powders

Effects of C and Mf Concentration on the Mechanical Properties of Wrought Superalloys Based on NASA IIB-11 Produced from Prealloyed Powders (76-GT-112) (A) **Ag 91**

Precipitate Icing

A New System of Preventing Icing of Gas Turbine Inlets (76-GT-84) (A) **Jl 96**

Precision Insertion Control

Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**

Precision Manufacturing

The Precision Manufacturing of Cams (76-DE-37) (A) **S 92**

Preferential Icing

Applying Heat Pipes to Avoid the Preferential Freezing of Highway Bridge Decks (76-ENAs-25) (A) **O 95**

Press-Fitted Joints

Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) (A) **F 87**

Pressure Development

Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) (A) **S 99**

Pressure Distribution

Pressure-Distribution Data for Steam Ejectors (75-WA/PID-3) (A) **My 96**

Pressure Drop

Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**

An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**

Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**

Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**

Pressure Gradients

Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**

The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**

On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients (75-WA/HT-5 J) (A) **My 101**

Pressure Perturbation

Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) (A) **Ja 118**

Pressure Pulses

Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

Pressure Sensors

Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**

Pressure Surge

Predicting Optimum Two-Stage Valve Closure (75-WA/FE-2) (A) **Je 108**

Pressure Surge Propagation

Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**

Pressure Transducers

Design of a Fiber Optic Pressure Transducer (75-WA/DE-8) (A) **Mr 105**

Pressure Vessel Internals

Reactor Pressure Vessel Internals (IF) **Ja 51**

Pressure Vessels

Development of a Jacketed Pressure Vessel: A Design Case Problem (76-DE-33) (A) **S 91**

Pressure Vessels and Piping

Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**

An Axisymmetric Finite Element in Natural Coordinates (75-WA/PVP-24) (A) **Ap 98**

A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**

Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**

Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**

Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**

The Effect of Electrode Manipulation on Deposit Notch Toughness (75-WA/PVP-18) (A) **Ap 98**

Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**

Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**

Interaction Between Two Inclined Cracks in a Plane (75-WA/PVP-7) (A) **Ap 98**

On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) (A) **Ap 98**

Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**

Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients

(75-WA/PVP-3) (A) **Ap 97**

Pressure Vessels and Piping Conference

Analysis of Overpressure Conditions in an Isolated Piping Section (76-PVP-8) (A) **D 98**

Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**

Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**

Autofrettaged Wire-Wrapped Pressure Vessels (76-PVP-47) (A) **D 103**

Buckling of Thin-Walled Cylindrical Tanks (76-PVP-9) (A) **D 99**

Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**

Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**

Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**

Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**

Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**

Design of a Nuclear Reactor Pressure Vessel and Closure Head for Maritime Application (76-PVP-2) (A) **D 97**

Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) (A) **D 104**

Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**

The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**

Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**

Elasto-Plastic Analysis of Perforated Plates Containing Triangular Penetration Patterns of 10 Percent Ligament Efficiency (76-PVP-22) (A) **D 100**

Elevated Temperature Elastic-Plastic-Creep Test of an Elbow Subjected to In-Plane Moment Loading (76-PVP-64) (A) **D 104**

Evaluation of Fracture Toughness Acceptance Criterion of Bolting Materials for Nuclear Applications (76-PVP-72) (A) **D 105**

Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**

Experimental-Analytical Correlation for the Pressure Analysis of a Loop Isolation Valve Body (76-PVP-69) (A) **D 105**

Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**

Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**

Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**

Fluid Mechanics for the Valve Designer (76-PVP-71) (A) **D 105**

Fracture in Straight Pipes Under Large Deflection Conditions; Part I: Structural Deformations (76-PVP-9) **D 98**; Part II: Pipe Pressures (76-PVP-14) (A) **D 99**

Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**

Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**

High-Pressure Safety at the Lawrence Livermore Laboratory, An Energy Research Facility (76-PVP-66) (A) **D 104**

Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**

The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**

Inelastic Finite Element Cyclic Analysis of a Nozzle-to-Cylinder Intersection (76-PVP-29) (A) **D 100**

Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**

Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**

Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**

The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**

Limit Pressure Analysis and Design of Cone-Cylinder Junction (76-PVP-49) (A) **D 103**

The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**

Materials Consideration for the BIGAS Coal Gasification Pilot Plant (76-PVP-41) (A) **D 102**

Materials Considerations in the HYGAS Process (76-PVP-60) (A) **D 101**

New Design of PWR Reactor Vessel Using Large Forgings (76-PVP-73) (A) **D 105**

Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**

Nozzle Design for ASME Code Requirements (76-PVP-20) (A) **D 100**

Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**

Overview of the Government's Programs in Coal Conversion, Research and Development (76-PVP-16) (A) **D 99**

A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**

Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**

Plastic Strain Concentrations in Ligaments (76-PVP-32) (A) **D 101**

Procedure for the Determination of Thermal Stresses in 3-Shell Junctions Common to Pressure Vessel Construction (76-PVP-53) (A) **D 103**

Rehabilitation of the Towers and Vessels of the Glace Bay Heavy Water Plant (76-PVP-68) (A) **D 105**

Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**

Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**

Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**

A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**

Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**

Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**

Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**

Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**

Stress Limits for Class 2 and Class 3 Components Under Upset, Emergency, and Faulted Conditions (76-PVP-61) (A) **D 104**

Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**

Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-48) (A) **D 103**

Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**

Three-Dimensional Analysis of an Elastic Plate-Cylinder Intersection by the Boundary-Point-Least-Squares Technique (76-PVP-34) (A) **D 101**

On Through Cracks at Interference Fit Fasteners (76-PVP-5) (A) **D 98**

Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) (A) **D 97**

On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Verification and Qualification Activities in Japan of Inelastic Analysis Computer Programs (76-PVP-44) (A) **D 102**

Pressure Viscosity

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**

Pressure-Gain Combustors

A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **JI 87**

Pressure-Time Histories

The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**

Pressurized Bearings

Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**

Pressurized Containers

Crack Propagation and Arrest in Pressurized Containers (76-PVP-12) (A) **D 99**

Pressurized Cylinders

Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**

Pressurized Pipelines

Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Pressurized Water Reactors

A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**

Pribilla, K. Proven Operational Performance of Low-Speed Two-Stroke Crosshead Engines in Marine Service (76-DGP-11) (A) **Ag 98**

Price, C. E. Minorities in Engineering (C) **My 40**

Primary Coolant Loops

Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

Primary Metals

Energy and Primary Metals (ES) **D 16**

Primrose, E. J. F. On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**; Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**

Prnka, T. Steels for Power Plants **Ja 26**

Probabilistic Design

On the Behavior of Statistical Models Used for Design (75-WA/DE-28) (A) **Mr 107**

Problem Resolutions

Using RMS Techniques for Designing RMS* and Operating Hazardous Facilities **N 21**

Process Hot Water

Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**

Process Industries

Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**

Computer-Aided Design Analysis and Selection Heat Exchanger with Phase-Changing Media (75-WA/PID-5) (A) **My 97**

Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**

Entropy and Availability Function Values of Saturated Ammonia Water Mixtures (75-WA/PID-2) (A) **My 96**

Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**

Pressure-Distribution Data for Steam Ejectors (75-WA/PID-3) (A) **My 96**

Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) (A) **My 96**

Wood Planer Noise (75-WA/PID-6) (A) **My 97**

Process Industry

Alternate Fuels Capability of Gas Turbines in the Process Industry (76-GT-119) (A) **Ag 92**

Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**

Processing Plant Operations

Processing Plant Operations (BTR) **My 61**

Processors

Pre- and Post-Processors are Needed (CT) **Ja 68**

Prockter, C. E. *(editor)* Kempe's Engineers Year Book for 1975 (CB) **JI 100**

Product Design

Design Criteria (C) **Je 47**

DTC Vs. DTCR Vs. DFSO = Conflict (?) **Mr 34**

Mr. Designer, Are You With It? (76-DET-82) (A) **D 94**

Product Design Implications of New High-Speed Milling Techniques (76-DE-22) (A) **S 90**

Product Hazards
Developing Safe Products **Je 31**
Product Integrity
Assuring Product Integrity (CB) **Ap 108**
Product Liability
Product Liability and the Mechanical Engineer (75-WA/SAF-1) (A) **Je 117**
Product Liability Litigation
Legal Developments in Product Safety **Ag 22**
Product Liability Suits
Product Liability: The Engineer in Court **Jl 20**
Product Planning
The Management of Product Planning (75-WA/Mgt-6) (A) **Ap 96**
Managing Product Planning **D 20**
Product Planning and Development—An Evolutionary Process—One Company's Experience (75-WA/Mgt-8) (A) **Ap 96**
Product Safety
Who Craves Caves? (C) **D 45**
Product Testing
Uses of Statistics in Product Testing and Evaluation (76-DE-25) (A) **S 91**
Production Engineering
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**
An Analysis of Tool Life Based on Flank-Face Wear, Part 1: Theory (75-WA/Prod-28) (A) **Mr 103**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) (A) **Mr 104**
The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) (A) **Mr 104**
Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) (A) **Mr 102**
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) (A) **Mr 100**
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**
Effects of Built-Up Edge in Drifting (75-WA/Prod-17) (A) **Mr 102**
On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**
Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) (A) **Mr 102**
Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**
An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**
Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) (A) **Ap 104**
Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) (A) **Mr 104**
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**
Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) (A) **Ap 105**
Metal Flow in Two-Die Swaging (75-WA/Prod-23) (A) **Ap 104**
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**
Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) (A) **Mr 102**
A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) (A) **Mr 102**
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**
On Work Rests While Turning Slender Jobs (75-WA/Prod-21) (A) **Mr 103**
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) (A) **Mr 101**
Production Monitoring
Production Monitoring System (IF) **Mr 59**
Production Systems
Production Systems: Planning, Analysis, and Control (CB) **N 104**
Productivity
Improving Productivity Through Engineering (NR) **Ja 56**
Material Handling—Toward Greater Productivity (NR) **Je 70**
Measuring and Enhancing the Productivity of Service and Government Organizations (CB) **Je 123**
The Myths of Productivity (76-DET-103) (A) **D 97**
Professional Development
ASME Sections—Educational Resource Centers **O 77**
Business and Industry Courses for Academic Credit **Jl 67**
Management Skills Program **Ap 75**
A New Look at Professional Development (Ed) **Mr 17**
One Way to Keep Your Job (PS) **S 75**
P.E. Review Courses **My 71**
Professional Development Committee **S 73**
Professional Development—Pulling It Together **Ap 40**
The Professional Manager's Speaking Skills **N 69**
Technical Division Short Course Programs **Ag 67**
Writing Right **D 77**
Professional Development Digest
ASME Pressure Vessel and Piping Short Course Program **Je 83**
Professional Employment
Hiring a Professional Employee/Finding a Professional Employer (PS) **Jl 69**
Professional Employment Guidelines
Guidelines: Understand Them, Accept Them (PS) **Je 85**
On-the-Job Give and Take (PS) **Ag 69**
Professional Engineering
Book Outlines NSPE's Professional Schools of Engineering Concept (EN) **O 70**
Professional Engineers
How to Become A Professional Engineer **S 24**
Solving the Problem Too Late (C) **S 48**
Professional Guidance
Your Career: How to Plan It, Manage It, Change It (CB) **Ag 104**
Professional Women
Career Training for Women (EN) **N 66**
Professionalism
Airline Pilots, Athletes, and Engineers (C) **D 45**
The Engineer's Identity Crisis **Jl 70**
Professionalism and Unionization (C) **Ag 41**
Profit Criteria
Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) (A) **Mr 104**
Programmable Analog Controllers
Advancements and Application of Programmable Analog Control Technology (76-GT-122) (A) **Ag 92**
Programmable Calculators
The Calculator: Topping its Hidden Talents (BTR) **N 52**
Mechanical Design and the Programmable Calculator (76-DET-91) (A) **D 96**
Role of the Programmable Pocket Calculator in Machine Design with Helical Spring Examples (76-DET-101) (A) **D 96**
Programmable Measuring Systems
Programmable Measuring System (BTR) **Jl 49**
Project Management
Project Management: Techniques, Applications and Managerial Issues (CB) **Ag 103**
Propagating Cracks
Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**
Propeller Current Meters
A Design Method on Propeller Current Meters (75-WA/FM-5) (A) **Je 118**
Propeller Pumps
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Propulsion Gear Units
Propulsion Gear Units for Gas Turbine Naval Installations (76-GT-26) (A) **Jl 89**
Propulsion System
XFV-12A Propulsion System Development (76-GT-125) (A) **Ag 92**
Prosthetic Walking Concepts
A Practical Stability Analysis of a Class of Bipedal Locomotion Prostheses (75-WA/Bio-13) (A) **Mr 100**
Protective Coatings
Protective Coating Systems (IF) **Je 66**
Protective Helmets
Mine Rescue Team Helmet (76-ENAs-69) (A) **N 95**
Prototype Bosch Units
The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**
Psychrometric Methods
A Psychrometric Method for Determining Water Vapor in Flue Gas (75-WA/APC-8) (A) **Je 113**
Public Sector Technology Transfer
Public Sector Technology Transfer—A Congressional Perspective (75-WA/Aero-1) (A) **My 98**
Public Sector Technology Transfer—The Policy Connection (75-WA/Aero-3) (A) **My 98**
Puishes, A. A Professionalism and Unionization (C) **Ag 41**
Pulsars
It's Not a Bird or a Plane—It's a Pulsar (NB) **Jl 62**
Pulsatile Flow
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) (A) **O 104**
Pulsating Fluids
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **Jl 99**
Pulsed Thermocouples
The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **Jl 86**
Pulses
Shape and Frequency Composition of Pulses From an Impact Pair (76-DET-36) (A) **N 100**
Pulverized Coal
Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 86**
Pumped Storage Power Station
An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A) **Ag 95**
Pumps
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**
Awards Contest for Papers on Pumps (EN) **Je 80**
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) (A) **Je 110**
Epoxy Resin Pumps (IF) **Jl 54**
Pump Handbook (CB) **Ag 102**
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Pundyk, J. M. Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**
Puri, P. Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**
Purification Systems
Ultraviolet Purification System (BTR) **Ag 51**
Putnam, A. A. Combustion Noise in Industrial Burners (75-WA/Fu-5) (A) **My 94**
Putnam, D. F. Experimental Study of the Constituents of Space Wash Water (76-ENAs-11) (A) **O 94**
Pyrex Flow Chamber
Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**
Pyrites
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) (A) **My 99**

Pyrogas
Pyrogas from Biomass (ES) **JI 16**
Pyrolysis
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**
Pyrometers
Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**
Pyrotechnic Shock
High Frequency Response of Beams (75-WA/APM-18) (A) **Je 120**

Q

Quach, V. B. Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) (A) **Ap 104**
Quaka, T. E. Dresden Station Liquid Radwaste System Modifications (75-Pwr-26) (A) **Ja 113**
Quality Control
Strobe Lights for Quality Control (BTR) **N 53**
Quarter-Elliptical Cracks
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**
Quasi-Coupling
Quasi-Coupling—An Approximate Solution Method for Interface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**
Quattrone, P. D. Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**
Quemard, C. Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **JI 94**
Quinn, W. F. An Analytical Study of a Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**
Quon, C. Numerical Studies of Diffusively Induced Convection in a Tilted Square Cavity (76-HT-47) (A) **O 103**

R

Rabe, G. B. Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**
Rabins, M. J. Simplification of High-Order Mechanical Systems Using the Routh Approximation (75-WA/Aut-10) (A) **Ap 94**
Rabovsky, D. *(author)* Cracking Down: Oil Refining and Pollution Control (CB) **D 107**
Racial Discrimination
The Dynamics of Economic Development for a Minority Enclave: Physical and Human Capital Formation in an American Indian Reservation (75-WA/Aut-6) (A) **Ap 93**
Radial Expansion
Radial Expansion of Impacted Helical Springs (75-WA/APM-25) (A) **JI 98**
Radial Flow Turbines
A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**
Radial Forging
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**
Radial Inflow Turbines
Losses in Radial Inflow Turbines (76-FE-9) (A) **Ag 94**
Radial Loads
Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) (A) **Mr 104**
Radial Velocity
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**
Radiant Energy
Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**
Radiation
Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**
Combined Radiation-Convection for a Real Gas (76-HT-58) (A) **O 104**
Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**
Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**
Radiation Boundary Conditions
A Nonsteady Heat Conduction Code with Radiation Boundary Conditions (75-WA/HT-91) (A) **My 106**
Radiation Plates
Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**
Radiation Trapping
The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**
Radiative Heat Transfer
Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**
An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**
Radiative Properties
Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**
Radiative Transfer
A New Differential Formulation of Radiative Transfer and Its Application to the One-Dimensional Problem (76-HT-49) (A) **O 103**
Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**
Radio
Syntony and Spark: The Origins of Radio (CB) **O 106**
Radioactive Waste
Custodians of Radioactive Waste (ES) **Ap 22**
Dresden Station Liquid Radwaste System Modifications (75-Pwr-26) (A) **Ja 113**
Liquid and Solid Radwaste Experience at the Nine Mile Point BWR (75-Pwr-9) (A) **Ja 111**
Monticello Nuclear Plant Radwaste System Operating Experience (75-Pwr-24) (A) **Ja 113**
Radioactive Waste (C) **D 46**
Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**
Taking Out the Garbage (C) **S 48**
The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation (75-Pwr-27) (A) **Ja 113**
Radioisotopic Thermoelectric Generators (RTG's)
Nuclear Fuel Aboard Viking (BTR) **Ag 44**
Radiometers
Heat Transfer Analysis of a Cavity-Type Solar Radiometer (75-WA/Sol-2) (A) **Mr 92**
Radwaste System
Radwaste System Startup and Operation, Three Mile Island Nuclear Station, Unit 1 (75-Pwr-14) (A) **Ja 111**
Radway, J. E. A Practical Review of the Cause and Control of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers (75-WA/CD-8) (A) **My 99**
Raghavan, M. R. Derivative Synthesis of Adjustable Four-Bar Mechanisms for Function Generation (76-DET-70) (A) **D 93**
Raia, E. Nuclear Reactions (C) **Ap 47**
Raidt, J. B. Vertical Motions During Railcar Impacts (75-WA/RT-10) (A) **F 78**
Rail Transportation
Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**
A Computer Method for Calculating Dynamic Responses of Nonlinear Flexible Rail Vehicles (76-RT-5) (A) **S 94**
Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**
Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**
Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**
An Investigation of Container Flat Car Ride Quality (75-WA/RT-7) (A) **F 78**
An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**
Investigation of a Torsionally Flexible Freight Car (75-WA/RT-13) (A) **F 78**
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**
Parametric Studies on a Railroad Freight Car Mathematical Model (75-WA/RT-11) (A) **F 78**
Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Cars and Equipment (75-WA/RT-6) (A) **F 77**; Locomotives (75-WA/RT-12) (A) **F 78**
Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**
Regenerative Drive for Subway Trains Part 1: Mechanical Accumulator Design (76-RT-1) (A) **S 94**; Part 2: Overall System Model (76-RT-2) (A) **S 94**; Part 3: System Evaluation (76-RT-3) (A) **S 94**; Part 4: Overall System Performance (76-RT-4) (A) **S 94**
Track/Train Dynamics Research and Progress: Phase One (75-WA/RT-9) (A) **F 77**
The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**
Vertical Motions During Railcar Impacts (75-WA/RT-10) (A) **F 78**
Railcar Impact
Vertical Motions During Railcar Impacts (75-WA/RT-10) (A) **F 78**
Railly, J. W. Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **JI 93**
Railroad Freight Cars
A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**
Railroad Roller Bearings
Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**
Railroad Research
Railroad Research: The Changing Emphasis **Ap 29**
Railroad Wheels
Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**
Railroads
Recognition of the Railroad as a National Resource **Je 96**
Railway Mechanical Engineering
Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Cars and Equipment (75-WA/RT-6) (A) **F 77**; Locomotives (75-WA/RT-12) (A) **F 78**
Railways
A Dream and Perseverence Build a Railway **S 82**
Rain Erosion
Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**
Raithby, G. D. Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Rajagopalan, R. Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**
Ralston A. *(editor)* Encyclopedia of Computer Science (CB) **N 104**
Ramachandra, K. State of Art at Research Level in the Design of Wildhaber-Movikov Circular Arc Gears (76-DET-78) (A) **D 94**
Ramaiyan, G. Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**
Ramburner Insulators
Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**
Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**
Random Excitation
Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) (A) **S 99**
Rankin, G. W. Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) (A) **Je 115**
Rao, J. S. Coupled Bending-Torsion Vibrations of Rotating Blades (76-GT-43) (A) **JI 91**
Rapid Control Systems
Advancements and Application of Programmable Analog Control Technology (76-GT-122) (A) **Ag 92**
Rapid Transit Systems
Rubber-Tired Rapid Transit—Part 1: System Concepts **My 26**; Part 2: Technical Characters **Je 39**
Transit Question (C) **N 42**
Rasmussen, M. L. On Compressible Turbulent Boundary Layers in the Presence of Favorable Pressure Gradients (75-WA/HT-53) (A) **My 101**
Rath, U. K. Designing to Facilitate the In-Service Inspec-

tion of Piping System in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**

Ravera, R. J. The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**

Ravuri, R. A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**

Ray, S. Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**

Rayner, H. M. Minimizing Fuel Costs (75-WA/Pwr-13) (A) **F 86**

Ražjevic, K. *(author)* Handbook of Thermodynamic Tables and Charts (CB) **Ag 103**

Reactor Coolant Piping

Techniques for Evaluating the Flaw Tolerance of Reactor Coolant Piping (76-PVP-48) (A) **D 103**

Reactor Coolants

Fatigue Crack Growth Characteristics of A533 Grade B Class I Plate in an Environment of High-Temperature Primary Grade Nuclear Reactor Water (76-PVP-3) (A) **D 97**

Reactor Operations

Evaluation of Fuel Rod Cladding Strength in Steady and Non-Steady Reactor Operation (75-WA/HT-74) (A) **My 104**

Reactor Pressure Vessels

Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**

Reactors

Reactor Pressure Vessel Internals (IF) **Ja 51**

Small Reactors + Helium Turbines = Near-Term Energy Savings **S 45**

Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**

Reactors (HTGR)

Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **Jl 90**

Control of a Gas Turbine HTGR (76-GT-97) (A) **Jl 98**

Designing to Facilitate the In-Service Inspection of Piping Systems in an HTGR Type Nuclear Power Plant (75-WA/PVP-6) (A) **Ap 98**

Fault Analysis of a Gas Turbine HTGR)76-GT-99) (A) **Jl 98**

Natural Draft Dry Cooling Tower Performance with Varying Ambient Conditions Applied to a Direct Cycle HTGR (75-WA/HT-44) (A) **My 101**

Primary System Preliminary Design for Gas Turbine HTGR Power Plant (76-GT-92) (A) **Jl 97**

A Secondary Power Plant for Gas Turbine—HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**

Reactors (LMFBR)

Advanced Nuclear Energy Systems **My 82**

An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**

The Breeder Abroad (ES) **F 14**

A Cesium Vapor Cycle for an Advanced LMFBR (75-WA/Ener-5) (A) **Mr 96**

Dynamic Response of LMFBR Primary Coolant Loop Components to Pressure Pulses (76-PVP-52) (A) **D 103**

Experimental Breeder Passes New Milestone (BTR) **My 49**

LMFBR at Engineering Readiness (BTR) **Ap 59**

LMFBR Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**

LMFBR Steam Generators Areas Requiring Special Attention (75-WA/HT-104) (A) **Je 116**

Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View (75-WA/NE-4) (A) **F 78**

Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**

The Safety and Environmental Impact of Liquid Metal Fast Breeder Reactors (75-WA/NE-7) (A) **F 79**

Reactors (PWR)

New Design of PWR Reactor Vessel Using Large Forgings (76-PVP-73) (A) **D 105**

Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78) (A) **My 105**

Rebbechi, B. On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**

Rebound Stroke

An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**

Receiver Pressure

The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**

Reclaimed Mining Land

Putting the Land Back to Work (ES) **Mr 18**

Recorder-Analyzer Systems

Stored Machine "Signatures" (BTR) **O 58**

Recovery Systems

A Method of Simulating the Performances of a Pebble Bed Thermal Energy Storage and Recovery System (76-HT-73) (A) **N 90**

Rectangular Cross Section

Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**

Rectangular Ducts

Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**

An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**

Rectangular Plates

Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**

Rectangular Trench

An Elastic Half Plane Weakened by a Rectangular Trench (75-WA/APM-7) (A) **Je 119**

Redd, F. J. Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**

Reddecliff, J. M. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) (A) **S 96**

Redekop, D. Three-Dimensional Analysis of an Elastic Plate-Cylinder Intersection by the Boundary-Point-Least-Squares Technique (76-PVP-34) (A) **D 101**

Redondi, G. On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) (A) **Ap 98**

Redor, O. H. Risk Management Technique for Design and Operation of Facilities and Equipment (75-WA/Aero-5) (A) **My 98**

Reduced Hiring

Reduced Hiring Leaves 12% of 1975 Engineering Grads Without Jobs (EN) **Ja 61**

Redundant Omega Clutch

The Redundant Omega Clutch—A Marine Propulsion Clutch for Turbines (76-GT-65) (A) **Jl 94**

Reed, C. New Twist for Oil Spill Cleanup **F 28**

Reed, C. L. The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**

Reed, L. L. The Development of A Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**

Reed, W. S. Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**

Reels

It's the "Real" Thing (BTR) **Ap 58**

Reeving Hoists

Failure Analysis of a Redundant Reeving Hoist (76-DE-21) (A) **S 90**

Reference Stress Methods

Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

Refinery Pollution Control

Cleaning Up: The Cost of Refinery Pollution Control (CB) **D 107**

Cracking Down: Oil Refining and Pollution Control (CB) **D 107**

Reflected Radiation

Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**

Reflood

Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**

Refrigerants

Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**

Refrigeration

OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**

Passive Refrigeration for Arctic Pile Supports (75-Pet-26) (A) **Ja 115**

Refrigerators

Refrigerator Draws Power from Solar Cells (BTR) **Ag 50**

Refuse Burning

The Btu's in Refuse (BTR) **D 55**

Refuse Collection

Correcting Collection (NB) **N 85**

Refuse Firing

Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**

Regenerative Combustion Turbines

Utility Experience with Regenerative Cycle Combustion Turbines (76-GT-85) (A) **Jl 96**

Regenerative Drive

Regenerative Drive for Subway Trains Part 1: Mechanical Accumulator Design (76-RT-1) (A) **S 94**; Part 2: Overall System Model (76-RT-2) (A) **S 94**; Part 3: System Evaluation (76-RT-3) (A) **S 94**; Part 4: Overall System Performance (76-RT-4) (A) **S 94**

Reggiardo, L. J. Group Effort Urged (C) **Ag 42**

Regime Transitions

Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**

Regional Administrative Conferences

RAC—Getting to the Grass Roots of ASME (Ed) **My 15**

Rehabilitation

Rehabilitation of the Towers and Vessels of the Glace Bay Heavy Water Plant (76-PVP-68) (A) **D 105**

Rehman, M. A Simple Pressure-Gain Combustor for Gas Turbines (76-GT-6) (A) **Jl 87**

Reid, M. W. Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**

Reid, R. C. The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**

Reismann, H. Dynamics of Initially Stressed Plates (76-APM-29) (A) **S 101**

Reiss, J. J. The Building Block Method of Cam Design (76-DE-36) (A) **S 92**

Reistad, G. M. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**

Relativity Theory

Space Probe Tests Einstein's "Equivalence Principle" (BTR) **S 56**

Reliability

Effect of Maintenance on Gas Turbine Reliability (76-GT-68) (A) **Jl 94**

Reliability & Maintainability

The R&M Discipline: Formula for Improved Products (NR) **Mr 60**

Relief Valves

Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) (A) **D 97**

Remotely Piloted Vehicle (RPV)

Remotely Controlled "Eagle" (BTR) **Ap 53**

Renfrew, C. A. Nuclear Notes (C) **My 42**

Reports Literature

Use of Reports Literature (CB) **F 88**

Reprocessing

The Pros and Cons of Reprocessing **D 34**

Wrapping Up the Nuclear Fuel Cycle—Part 1: Reprocessing Nuclear Power's Spent Fuel **D 32**

Research Craft

Craft Readied for Tests (BTR) **F 44**

Research & Development

Needed: More Ceramic R&D (BTR) **O 55**

R&D "Combustion Bomb" (BTR) **N 46**

Research & Development Funding

Getting the Inside Scoop on Federal R&D **Ag 37**

R&D Funding: An Upward Trend (Ed) **Mr 3**

Research & Development Planning

Systems Approach to R&D Planning for Energy/Environmental Interface (75-Pwr-2) (A) **Ja 110**

Research Opportunities

Opportunities for Research (EN) **D 74**

Resource Recovery

New Resource Recovery Centers to Open (NB) **Je 79**

Research Results

Professors: Publicize Research Results (NB) **D 72**

Research Satellites

Satellite Aid to 'Quake Prediction (BTR) **My 54**

Research Tests

Research Tests (75-Pet-47) (A) **Ja 118**

Residual Bending Stresses

Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) (A) **Mr 100**

Residual Changes

Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**

Residual Elements
Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**
Residual Oil Combustion
The Effect of Additives in Reducing Particulate Emissions from Residual Oil Combustion (75-WA/CD-7) (A) **My 100**
Residual Oils
Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**
Residual Stresses
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**
Resource Recovery
The Technology of Solid Waste Air Classification for Resource Recovery (76-ENAs-50) (A) **N 92**
Resistance Thermometers
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
Response Monitoring
Development of a Response Monitoring System and Application to a Barge (75-WA/OcE-10) (A) **Ap 91**
Retaining Rings
Giant-Size Retaining Rings (BTR) **Mr 50**
Retirement Accounts
Individual Retirement Accounts for Engineers (PS) **F 63**
Retracting Vanes
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) (A) **Ag 93**
Reverse Flow
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**
Reverse Osmosis
Direct Raw Sewage Reverse Osmosis: Reclamation of Waste Water at San Diego (76-ENAs-45) (A) **O 97**
The Treatment of Liquid Radwaste by Reverse Osmosis Conception to Operation (75-Pwr-27) (A) **Ja 113**
Reversed Flow Phenomena
Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **Jl 96**
Rewetting
Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**
Reyes-Guerra, D. R. ME's Broad Coverage (C) **Jl 42**
Reynolds, B. L. Heat Transfer in a Corona Discharge **O 44**; Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**
Reynolds Numbers
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) (A) **O 105**
Rhoades, G. Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**
Rhodes, A. F. Elections to Fellow Grade **F 75**
Rhodes, J. A. The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**
Riaz, M. A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) (A) **Mr 92**
Ribando, R. J. Natural Convection in a Porous Medium: Effects of Confinement Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**
Rice Hulls
Rice-Hull Cement (BTR) **Je 61**
Rice, S. L. Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**
Rice, W. Performance of Hydraulic Gas Compressors (76-FE-5) (A) **Ag 94**
Rice, W. B. An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**
Richardson, A. M. Inside Plant Engineering (EN) **Ag 62**
Richardson, H. H. Elections to Fellow Grade **Je 107**; Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Richardson, L. W. Trouble Ahead? (C) **My 41**
Richmond, O. Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**
Rickett, D. A. Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 85**
Ricks, O. G. Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**
Ride Quality
An Investigation of Container Flat Car Ride Quality (75-WA/RT-7) (A) **F 78**
Ride Strut
An Analysis of a Hydro-Pneumatic Ride Strut (75-WA/FE-22) (A) **Je 110**
Riedle, K. Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**
Riffel, R. E. An Experimental Determination of the Unsteady Aerodynamics in a Controlled Oscillating Cascade (76-GT-17) (A) **Jl 88**
Riggs, J. L. *(author)* Production Systems: Planning, Analysis, and Control (CB) **N 104**
Rightmire, G. K. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**
Rigid Body Guidance
Mixed Exact-Approximate Planar Mechanism Position Synthesis (76-DET-29) (A) **N 99**
Rigid Plastic Methods
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) (A) **F 87**
Rigid Rectangular Foundations
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**
Rigid Shaft Determinations
Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**
Rigid-Plastic Beams
Dynamic Behavior of Ideal Fiber-Reinforced Rigid-Plastic Beams (76-APM-21) (A) **S 100**
Rigid-Plastic Plates
Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) (A) **S 99**
Riley, J. P. *(editor)* Chemical Oceanography (CB) **Ag 104**
Rimbey, D. H. The Design and Development of a Magnetic Heart Pump (75-WA/Bio-9) (A) **Mr 100**. The Magnetic Heart Pump Challenge **Je 36**
Ring Displacement
Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) (A) **Mr 104**
Ring Spinning
Balloon Collapse in Ring Spinning (75-Tex-2) (A) **Ja 124**
Rings
Consistent Treatment of Extensional Deformations for the Bending of Arches, Curved Beams and Rings (76-PVP-11) (A) **D 99**
Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) (A) **Mr 104**
Ring-Spinning Tension
Effects of Spindle Centering on Ring-Spinning Tension (76-Tex-2) (A) **N 95**
Rippel, H. C. Elections to Fellow Grade **S 88**
Risk Management System
Risk Management Technique for Design and Operation of Facilities and Equipment (75-WA/Aero-5) (A) **My 98**
Using RMS Techniques for Designing RMS* and Operating Hazardous Facilities **N 21**
Roberts, A. S., Jr. Design of a Fiber Optic Pressure Transducer (75-WA/DE-8) (A) **Mr 105**
Roberts, C. C., Jr. Infrared Temperature Measurement Applied to Engineering Design Analysis (75-WA/TM-3) (A) **My 96**
Roberts, G. W. CATATHERMAL® Combustion: A New Process for Low-Emissions Fuel Conversion (75-WA/Fu-1) (A) **My 94**
Roberts, P. B. Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **Jl 87**
Roberts, W. E. Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**
Robinson, F. J. An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**
Robot System
Industrial Robot System (IF) **Ja 51**
Robotics
Build Your Own Working Robot (CB) **S 103**
Robots
Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**
Robson, G. D. Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **Jl 97**
Rock Melting Drills
Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) (A) **My 104**
Rocker Mechanisms
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) (A) **Mr 106**
Rocket Pump Inducers
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**
Rockwell, D. O. An Experimental Investigation of Wall Jet-Receiver Interaction (76-FE-18) (A) **Ag 95**; Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **Jl 95**
Rod Bundles
Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**
SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**
Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**
Roderick, P. The Wheel Story (C) **Jl 40**
Rodman, Gen. T. J. A Numerical Method for the Dynamic Analysis of Mechanical Systems in Impact (76-DET-1) (A) **N 97**
Rods
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**
Roe, K. K. Present Status and Future Trends in LMFBR Plant Design from the Architect-Engineer Point of View (75-WA/NE-4) (A) **F 78**
Roe, R. J. Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**
Roebelen, G. J., Jr. A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**
Roessner, J. D. Federal Technology Transfer: Results of a Survey of Formal Programs (75-WA/Aero-4) (A) **My 98**
Rogers, C. C. Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**
Rohde, S. M. Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**; On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) (A) **Ja 118**; A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) (A) **S 100**
Rohsenow, W. M. Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**
Roller Bearings
Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) (A) **S 96**
An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**
Reliability of Railroad Roller Bearings (76-LubS-18) (A) **S 98**
A Systems Approach to Determining Actual Misalignment and Load Distribution for Cylindrical Roller Bearings in Commercial Gear Trains (76-LubS-15) (A) **S 98**
Roller Nut
Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**
Roller Wire Design
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**
Rollers
A Simplified Model for the Elastohydrodynamic Traction Between Rollers (75-Lub-6) (A) **Ja 118**
Rolling
The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**; Part II: Experimental (76-LubS-10) (A) **S 97**
Workability of Aluminum Alloy 7075-T6 in Upsetting and

Rolling (75-WA/Prod-13) (A) **Mr 101**

Rolling Contacts
On Cage-Plane Motion (76-DET-2) (A) **N 97**
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) (A) **S 95**
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**

Rolling Element Bearings
Credit Where It's Due (C) **N 43**

Rolling Elements
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) (A) **S 96**

Rollins, J. Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Root, R. R. A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**

Rose, F. K. Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **Jl 97**

Rose, S. C. Single Tube and Rod Bundle Blowdown Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Rosen, S. S. Air Quality Considerations in Environmental Planning (75-WA/APC-12) (A) **Je 114**

Rosener, A. A. The Development of a Positive Isolation Disconnect (76-ENAs-12) (A) **O 94**

Rosenfield, A. R. Steady-State Crack Propagation in Pressurized Pipelines (76-PVP-7) (A) **D 98**

Ross, J. W., Jr. Development of a Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**

Rossetto, S. Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**

Rotary Expanders
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) (A) **Mr 105**

Rotary Mud Separators
Development of a Technique to Provide a Predictable Solids Separation with the Rotary Mud Separator (75-Pet-31) (A) **Ja 116**

Rotary Vane Compressors
New Rotary Vane Compressor (IF) **O 64**

Rotatability
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) (A) **N 99**

Rotating Annular Disks
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) (A) **Ja 120**

Rotating Blades
Coupled Bending-Torsion Vibrations of Rotating Blades (76-GT-43) (A) **Jl 91**

Rotating Cylinders
A Numerical Study of Instability of the Flow Between Rotating Cylinders (76-FE-27) (A) **S 95**
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (75-WA/HT-56) (A) **My 102**

Rotating Disks
An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**
Boundary-Layer Similarity Near the Edge of a Rotating Disk (75-WA/APM-3) (A) **Je 119**
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) (A) **F 82**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) (A) **Ag 94**
Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**

Rotating Ducts
Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**

Rotating Fans
Optical Determination of Rotating Fan Blade Deflections (76-GT-48) (A) **Jl 92**

Rotating Medium
Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**

Rotating Rings
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Rotating Shaft Seals
Rotating Shaft Seals: Part 2—The Magnetic Fluid Seal Considered in the Context of Seven Previous Basic Types (76-DET-97) (A) **D 96**

Rotating Surfaces
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**

Rotating Systems
Transfer of Heat in Rotating Systems (76-GT-25) (A) **Jl 89**

Rotational Speed
An Experimental Study on Variations of Rotational Speed and Flapping Vibrations in Belt Drives (76-DET-102) (A) **D 97**

Roth, B. Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**; Momentum Balancing of Four-Bar Linkages (76-DET-28) (A) **N 99**

Rothe, P. H. Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**

Rotor-Bearing Systems
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) (A) **Mr 106**
Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **Jl 96**

Rotor Dynamics
Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **Jl 93**
Short Bearing Analysis Applied to Rotor Dynamics, Part 1: Theory (75-Lub-30) (A) **Ja 121**; Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**

Rotor Fan Blades
Elementary Three-Dimensional Interactive Blade Impact Analysis (75-WA/GT-15) (A) **F 82**

Rotor Forgings
Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**

Rotor Passages
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**

Rotor Rundown Time
Using Rundown Time as Bearing Life Indicator **My 20**

Rotor Vibrations
Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**

Rotors
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**
Torquewhirl—A Theory to Explain Nonsynchronous Whirling Failures of Rotors with High Load Torque (76-DE-29) (A) **S 91**

Rough Surfaces
Statistical Numerical Analysis of Radiative Properties of a Rough Surface (76-HT-51) (A) **O 104**

Roughness Elements
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**

Rouleau, W. T. The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **Jl 95**

Round Tubes
Measurement of some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Roundness Errors
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) (A) **Mr 103**

Routh Approximation
Simplification of High-Order Mechanical Systems Using the Routh Approximations (75-WA/Aut-10) (A) **Ap 94**

Rovetta, A. On a Method for the Study of Constant Velocity Ball Joints (76-DET-66) (A) **D 93**

Rowan, W. J. LMFBR Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**

Roy, R. P. An Investigation of Momentum and Heat Transport in Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) (A) **Ap 99**

Rozenman, T. Natural Draft Performance of Air Cooled Heat Exchangers (75-WA/HT-38) (A) **Ap 104**

Rubber-Tired Transit Technology
Rubber-Tired Rapid Transit—Part 1: System Concepts **My 26**; Part 2: Technical Characters **Je 39**

Rubber Tires
The Occidental "Flash Pyrolysis" Process for Recovering Carbon Black and Oil from Scrap Rubber Tires (76-ENAs-42) (A) **N 91**

Rubel, A. J. KINSYN III: A New Human-Engineered System for Interactive Computer-Aided Design of Planar Linkages (76-DET-48) (A) **N 102**

Rubenstein, C. An Analysis of Tool Life Based on Flank-Face Wear, Part 1: Theory (75-WA/Prod-28) (A) **Mr 103**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) (A) **Mr 104**

Rubin, E. S. Nuclear Notes (C) **My 43**

Rucigaly, J. C. Assembly and Test of a Direct Reversing Marine Gas Turbine (76-GT-27) (A) **Jl 90**

Rudinger, G. Some Aspects of Gas-Particle Jets in a Cross Flow (75-WA/HT-5) (A) **Ap 99**

Rueth, N. Wrapping Up the Nuclear Fuel Cycle—Part 1: Reprocessing Nuclear Power's Spent Fuel **D 32**

Ruiz, C. Buckling of Thin-Walled Cylindrical Tanks (76-PVP-19) (A) **D 99**; Ovalization of Cylindrical Tanks as a Result of Foundation Settlement (76-PVP-46) (A) **D 103**; Static and Dynamic Seals: Part I—Static Seals (76-DET-83) (A) **D 95**

Rupture Forces
Inelastic Response of a Nuclear Pipe Elbow Subjected to Rupture Forces (76-PVP-55) (A) **D 104**

Rupture Strength
The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) (A) **F 87**

Rusek, P. Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) (A) **Mr 104**

Rush, C. K. A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**

Russell, D. E. Einstein Puzzled (C) **N 42**

Russell, L. M. Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) (A) **Ap 100**

Russell, R. E. Status Report—Subsonic Aircraft Noise Reduction (76-GT-116) (A) **Ag 91**

Ruthrof, K. Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**

Rylander, H. G. Inception of Cavitation from a Solid Surface (75-WA/DE-13) (A) **Mr 104**

S

Saberian, A. Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**

Sabin, C. M. Some Heat Transfer Performance Criteria for High Temperature Fluid Systems (75-WA/HT-103) (A) **Je 116**

Sacco, A., Jr. The Effect of H_2O/H_2 and CO_2/CO Ratios on the Reduction of Carbon Dioxide in the Bosch Process (76-ENAs-7) (A) **O 93**

Sackarendt, P. Vaporization of LNG with Closed-Cycle Gas Turbine (76-GT-38) (A) **Jl 91**

Sacks, P. S. Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**

Sadler, J. P. Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) (A) **N 98**

Safe Product Development
Developing Safe Products **Je 31**

Safety
Engineering Biological Evaluation of the Work Environment (75-WA/SAF-4) (A) **Je 117**
The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) (A) **Ap 96**
Meeting OSHA Noise Criteria in a Central Utility Plant of a Large Manufacturing Facility (75-WA/SAF-2) (A) **Je 117**
Product Liability and the Mechanical Engineer (75-WA/SAF-1) (A) **Je 117**
Recognition and Reduction of Hearing Damage Risk During Farm Operations (75-WA/SAF-3) (A) **Je 117**

Safety Design
Systems Analysis and Design for Safety (CB) **N 104**

Safety Impact
The Safety and Environmental Impact of Liquid Metal Fast

Breeder Reactors (75-WA/NE-7) (A) **F 79**

Safety Programs

High-Pressure Safety at the Lawrence Livermore Laboratory, An Energy Research Facility (76-PVP-66) (A) **D 104**

Safety Valves

Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**

Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) (A) **D 97**

Sagan, C. Life on Mars? (BTR) **Ag 44**

Saha, P. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**

Saheb, R. E. Evaluation of Hold-Time Effects in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**

Sahell, F. P. The Technology of Solid Waste Air Classification for Resource Recovery (76-ENAs-50) (A) **N 92**

Saintsbury, J. A. Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**

Saly, M. Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**

Sakata, K. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **JI 91**

Sakuta, K. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Salt

Experiments in Layered Natural Convection of Heat and Salt (76-HT-45) (A) **O 103**

Salt Domes

Salt of the Earth (BTR) **JI 47**

Salt-Brine Interfaces

Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**

Saltsman, J. F. Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**

Salzano, F. J. High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**

Samanta, S. K. A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) (A) **S 100**

Sampath, P. Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**

Sampietro, A. C. Limit Limits? (C) **Ja 34**

San Martin, R. L. Inverse Problem of Heat Conduction in Composite Media (75-WA/HT-83) (A) **My 106**

Sanborn, D. M. Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**

Sandgren, E. A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**

Sandor, G. N. Analytical Design of Cam-Type Angular-Motion Compensators (76-DET-22) (A) **N 99**; Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**

Sandstede, H. Gas Turbines Burning Dirty Fuels (76-GT-66) (A) **JI 94**

Sanesi, N. L. Beaver Plant-Conversion to Combined Cycle (75-Pwr-29) (A) **Ja 114**

Sankar, T. S. Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**

Sarau, R. W. Supercritical Unit Availability Six-Year Case History (75-Pwr-25) (A) **Ja 113**

Saravanamuttoo, H. I. H. An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **JI 90**

Sarkar, J. Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**

Sarpal, G. S. An Examination of the Repeatability of Combustion Processes in a Homogeneous Stream of a Gaseous Fuel and Air (76-GT-16) (A) **JI 88**

Satellites

Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**

Satellite "Sees" Strip Mines (BTR) **O 57**

Saturation

Entropy and Availability Function Values of Saturated Ammonia-Water Mixtures (75-WA/PID-2) (A) **My 96**

Saturn

On Course for Saturn (BTR) **Mr 49**

Saunders, J. F. The Growing Market for Commercial Submarines **O 28**

Savery, C. W. Counter-Flow Evaporation Cooling Tower Performance Modeling and Verfication (75-WA/HT-43) (A) **My 100**

Savery, C. W. Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**

Savoie, L. Air Inlet Filtration for Gas Turbine Units (76-GT-81) (A) **JI 95**

Sawata, S. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Sawdy, D. T. Experimental-Analytical Correlation of Optimum Duct Acoustic Liner Performance (76-GT-126) (A) **Ag 93**

Sawin, C. F. Spacelab Mission Simulation—II (76-ENAs-22) (A) **O 95**

Sawley, R. J. Acoustical Energy Decay in Piping Systems (75-WA/Pet-6) (A) **My 95**

Sawyer, R. H. Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**

Sawyer, R. T. *(editor)* Sawyer's Gas Turbine Catalog 1975 (CB) **JI 100**

Sazawal, V. K. Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**

Scalers

A Flueric Laminar Operational Amplifier Scaler (75-WA/Flcs-3) (A) **Je 114**

Scanning Electron Microscopy

Particle Measurements for Textile Airborne Process Waste Control (76-Tex-9) (A) **N 96**

Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**

Scattering

Scattering of a Love Wave by the Edge of a Thin Surface Layer (75-WA/APM-24) (A) **JI 98**

Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

Scattering Medium

Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**

Scavenger Plants

Scavenger Plants (BTR) **Je 58**

Schachenmann, A. A. Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **JI 95**

Schaeper, A. W. A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**

Schaffert, R. M. *(author)* Electrophotography (CB) **My 109**

Schaller, R. E. A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**

Schatzberg, P. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**

Scheidegger, A. E. *(author)* Physical Aspects of Natural Catastrophes (CB) **Mr 108**

Scheiderman, F. C. An Experimental Study of Pressure Drop and Liquid Transport of Oil-Refrigerant Mixtures (75-WA/HT-26) (A) **Ap 102**

Schenck, D. J. A Constitutive Equation for Whole Human Blood (75-WA/Bio-12) (A) **Mr 100**

Scheps, P. R. The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**

Schimmel, W. P., Jr. Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**

Schirmer, R. M. A Simple Variable-Geometry Combustor for the Automotive-Turbine Engine (76-GT-11) (A) **JI 87**

Schlader, A. F. The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **JI 86**

Schmidt, P. S. Fuel Conservation and the Breeder Reactor **Mr 28**

Schmisseur, W. E. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**

Schmugar, K. L. Vibratory Wear of Fuel Rods (75-WA/HT-79) (A) **My 105**

Schneider, G. E. Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (75-WA/HT-95) (A) **My 107**; A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**

Schneider, R. E. Single Tube and Rod Bundle BLOWDOWN Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Schneyer, G. P. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**

Schoeberle, D. F. On the Unconditional Stability of an Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**

Schoenberg, M. Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **JI 98**

Schora, F. C. Materials Considerations in the HYGAS Process (76-PVP-60) (A) **D 101**

Schrider, L. A. In Situ Coal Gasification—A Unique Means of Energy Recovery **Mr 20**

Schriempf, J. T. Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Schrock, V. E. Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**; Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**; Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**; Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) (A) **My 104**

Schubert, F. H. Integrated Testing of an Electrochemical Depolarized CO_2 Concentrator (EDC) and a Bosch CO_2 Reduction Subsystem (BRS) (76-ENAs-35) (A) **O 96**

Schultz, L. O. Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 95**

Schulze, F. W. Progress in Railway Mechanical Engineering (1974-1975 Report of Survey Committee) Locomotives (75-WA/RT-12) (A) **F 78**

Schuster, J. R. Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **JI 90**; A Secondary Power Plant for Gas Turbine-HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**

Schwanhausser, E. J. More Metrics (C) **F 38**

Schwartz, E. G. Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**

Schwartz, M. *(author)* The Treatment of Industrial Wastes (CB) **JI 100**

Schwartzbart, H. Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**

Schweitzer, P. H. Electronic Engine Control: A Draper-Li Breakthrough Ripens in 25 Years **S 35**

Scibbe, H. W. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**

Scibor-Rylski, A. J. *(author)* Road Vehicle Aerodynamics (CB) **F 89**

Science

The Existential Adventure: The Roles of Science and Belief (CB) **Ag 103**

Governing Science and Technology (CB) **Ag 103**

Science and the Sporting Scene (BTR) **S 53**

The Science and Technology Policy Act of 1976 (WW) **JI 68**

Science Court

Should a Science Court be Established? (BTR) **JI 51**

Science Fiction

Science Fiction Becomes a Reality **Je 88**

Science Programs

Graduate Enrollment Up for Second Straight Year (EN) **Ap 72**

Scientific Experiments

Experiments in Space (EN) **Mr 72**

Scientific Satellites

Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**

Scoop Wheel

A Waterway Changes with Time **Ja 103**

Scott, C. J. Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**; Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**

Scott, D. Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**

Scott, F. B. Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**

Scott, V. D. Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**
Scott, W. R., Jr. New Products Through Acquisition (75-WA/Mgt-3) (A) **Ap 96**
Screw Displacements
Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**
Scrubber Sludge
Scrubber Sludge Supports Vegetation (BTR) **Ap 55**
Scrubbing Applications
The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**
Scullion, J. The Heat Pipe—A Survey (76-DET-84) (A) **D 95**
Sea Level Static
A Multi-Variable Control for a Turbofan Engine Operating at Sea Level Static (76-GT-71) (A) **JI 95**
Sea Salt Particles
Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **JI 93**
Sea Solar Power
Don't Forget Sea Solar Power (C) **O 51**
Evaporator Design for Sea Solar Power Cycles (75-WA/Sol-5) (A) **Mr 93**
Seal Development
Seal Development for Large, Submersible Electric Motors (75-Lub-17) (A) **Ja 119**
Sealants
What's New in Glue (NB) **D 72**
Seals
Guides for Seals and Bearings (TL) **Ap 106**
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**
Static and Dynamic Seals: Part I—Static Seals (76-DET-83) (A) **D 95**
Seasonal Changes
Simulating Seasonal Changes (NB) **Ag 61**
Sea-Surface Chemistry
Chemical Oceanography (CB) **Ag 104**
Seawater
Sunlight May Power a Hydrogen Economy (BTR) **My 46**
Seawater Energy
Seawater Energy (BTR) **D 59**
Seay, J. G. Our Natural Gas Supply (C) **Ag 41**
Secondary Flow
The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **JI 95**
Secondary Flows in Compressor Bladings (76-GT-57) (A) **JI 93**
Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **JI 93**
Secord, T. C. Elections to Fellow Grade **Je 107**; Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 96**
Sedoff, R. T. A New Concept Size Selective Sampling System for Monitoring Particulate Air Pollution (75-WA/APC-4) (A) **Je 112**
Segmented Plane Solar Concentrators
Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**
Seireg, A. Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**; An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**
Seismic Activity
Sunquakes? (BTR) **N 51**
Seismic Analysis
Response of a Cylindrical Fluid Container to Seismic Motion (76-PVP-28) (A) **D 100**
Seivold, A. L. Thermal Control of the International Ultraviolet Explorer (76-ENAs-38) (A) **O 97**
Self-Accumulating Conveyor
Self-Accumulating Conveyor (IF) **Je 66**
Self-Rescue Breathing Apparatus
Combined Short and Long Duration Self-Rescue Breathing Apparatus (76-ENAs-31) (A) **O 96**
Semi-Transparent Layers
The Effective Absorptance of a Semi-Transparent Layer on a Diffuse, Opaque Substrate (76-HT-4) (A) **O 98**
Senate Reorganization
Toward a More Efficient Congress (WW) **Je 84**
Sengupta, S. Some Experiments on Laminar Wall Jets (75-WA/Flcs-7) (A) **Je 115**
Senoo, Y. An Analysis of the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) (A) **Je 109**
Sensors
Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**
Separated Flow
Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**
Separated Positions
Elimination of the Branch Problem in Graphical Burmester Mechanism for Four Finitely Separated Positions (75-WA/DE-23) (A) **Mr 106**
Sequential Wall Jets
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**
Sergev, S. S. Development of a Response Monitoring System and Application to a Barge (75-WA/OcE-10) (A) **Ap 91**
Serovy, G. K. Elections to Fellow Grade **My 91**
Service Loads
Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**
Service Organizations
Measuring and Enhancing the Productivity of Service and Government Organizations (CB) **Je 123**
Service-Life Prediction
V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**
Sessions, B. W. Spacelab Environmental Control System (76-ENAs-58) (A) **N 93**
Seth, B. B. Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**
Setiawan, B. Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**
Setright, L. J. K. *(author)* Some Unusual Engines (CB) **Ap 107**
Seven-Link Mechanisms
Displacement Analysis of Spatial Seven-Link 5R-2P Mechanisms (76-DET-39) (A) **N 100**
Severe Load
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**
Sewage
Direct Raw Sewage Reverse Osmosis: Reclamation of Waste Water at San Diego (76-ENAs-45) (A) **O 97**
Sewage Sludge
The Assets of Sewage Sludge (BTR) **Ap 53**
Sex Discrimination
A Protest . . . (C) **JI 40**; . . . and a Reply (C) **JI 41**
Shaalan, M. R. A. An Experimental Investigation of the Swirling-Flow Performance of an Annular Diffuser at Low Speed (75-WA/FE-17) (A) **Je 110**
Shabaka, I. M. M. An Experimental Investigation of the Swirling-Flow Performance of an Annular Diffuser at Low Speed (75-WA/FE-17) (A) **Je 110**
Shabara, M. A. The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**
Shade, D. J. Some Adverse Effects of Stress Corrosion in Steam Turbines (76-IPC-Pwr-8) (A) **S 93**
Shaft Runout
Influence of Shaft Runout on Vibration Analysis (76-DE-38) (A) **S 92**
Shah, N. G. An Improved Flux Model for the Calculation of Radiation Heat Transfer in Combustion Chambers (76-HT-55) (A) **O 104**
Shah, R. C. On Through Cracks at Interference Fit Fasteners (76-PVP-5) (A) **D 98**
Shah, R. K. Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**; Part 2—Heat Transfer and Flow Friction Characteristics (75-WA/HT-9) (A) **Ap 100**
Shahinian, P. Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**
Pollution, Price, and Shale Oil (ES) **N 14**
Shale Oil
Shapiro, N. P. Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**
Sharama, M. P. The Particle-Source-In-Cell (PSI-Cell) Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**
Sharma, C. P. Entropy and Availability Function Values of Saturated Ammonia-Water Mixtures (75-WA/PID-2) (A) **My 96**
Sharma, P. B. Treatment of the Annulus Wall Boundary Layer Using a Secondary Flow Hypothesis (76-GT-52) (A) **JI 93**
Sharma, S. P. Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**
Sharp Cones
Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**
Sharp Tools
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**
Shavit, A. Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**
Shaw, M. C. Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) (A) **Mr 102**
Shchikovsky, Y. D. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**
Shear Turbulent Flow
Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **JI 94**
Sheet Flatness
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) (A) **Mr 100**
Sheet-Metal Forming
Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) (A) **Mr 102**
Sheet Metal Wrappers
A Hybrid Ceramic-Metal Combustion System (76-GT-22) (A) **JI 89**
Sheet Metals
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**
Sheets, H. E. Elections to Fellow Grade **My 91**
Shetfer, B. W. Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**
Shekleton, J. R. Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **JI 87**
Shell Gasification
The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**
Shell Junctions
Procedure for the Determination of Thermal Stresses in 3-Shell Junctions Common to Pressure Vessel Construction (76-PVP-53) (A) **D 103**
Shell Models
Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) (A) **D 99**
Shells
A Beam Analogy in the Limit Analysis of Open Cylindrical Shells (75-WA/PVP-4) (A) **Ap 97**
Creep Buckling of Cylindrical Shells Using a Reference Stress Method (76-PVP-50) (A) **D 103**
On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**
Inelastic Behavior of Finite Circular Cylindrical Shells (76-PVP-42) (A) **D 102**
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) (A) **S 98**
A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**
A Simplified Method for the Finite-Displacement Analysis of Elastic-Plastic Plates and Shells (76-PVP-51) (A) **D 103**
Thermal Stress Analysis of Thin, Spherical Shells (76-DET-104) (A) **D 97**
Shen, F. C. T. The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) (A) **S 100**
Shen, H. S. An Experimental Investigation of Wall Jet-Receiver Interaction (76-FE-18) (A) **Ag 95**
Shepp, L. P. Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**
Sherlock, J. E. Dynamic Simulation of Complex Systems Utilizing Experimental and Analytical Techniques (75-WA/Aero-9) (A) **My 99**
Sherman, R. Truth About Rueth (C) **Ja 37**

Shigley, J. E. Mechanical Design and the Programmable Calculator (76-DET-91) (A) **D 96**

Shipboard Laundry Wastewater

Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**

Ships

Hydrodynamic Pressure Field on a Slender Ship Moving Over a High Frequency Wavy Shallow Bottom (76-APM-22) (A) **S 100**

Shirazi, M. A. The Characteristics of Thermal Plumes (75-WA/HT-64) (A) **My 103**

Shoaw, M. C. Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**

Shock Layers

Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**

Shock Response Spectra

Dynamics of High-Speed Cam Mechanisms with Damped Flexible Followers Driven by Flexible Camshafts (76-DET-63) (A) **D 92**

Shock Testing

Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Shock Treatment

On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**

Shock Tubes

Reaction Rate Determination and Correction for Finite Quenching Rate in Shock Induced Pyrolysis of Methane via a Simple Shock Tube (76-GT-13) (A) **JI 87**

Shock Waves

Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Laser Velocimeter (76-GT-49) (A) **JI 92**

Short Bearing Analysis

Short Bearing Analysis Applied to Rotor Dynamics, Part 1: Theory (75-Lub-30) (A) **Ja 121**; Part 2: Results of Journal Bearing Response (75-Lub-31) (A) **Ja 122**

Shouman, A. R. State of the Art Review of Sliding Vane Machinery (76-DET-90) (A) **D 96**

Shoup, T. E. On the Algebra of Four-Bar Linkage Centrode Curves (76-DET-13) (A) **N 98**

Shum, K. A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**

Shumate, W. H. Spacelab Mission Simulation—II (76-ENAs-22) (A) **O 95**

Shumsky, R. V. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Shuttle Forward Radiators

The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**

Shuttle Missions

CO_2 and Humidity Removal System for Extended Shuttle Missions: Equilibrium Testing and Performance Analysis (76-ENAs-56) (A) **N 93**

Shuttle Orbiter

A Regenerable CO_2 and Humidity Control System for Shuttle (76-ENAs-60) (A) **N 93**

The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**

Shuttle Payload Bay

Auxiliary Payload Power System Thermal Control (76-ENAs-59) (A) **N 93**

Shuttle Payloads

Thermal Control Systems for Low Temperature Shuttle Payloads (76-ENAs-65) (A) **N 94**

Shuttle/Spacelab

Life Sciences Laboratories for the Shuttle/Spacelab (76-ENAs-28) (A) **O 96**

Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**

SI Facts

Momentous Momentum (C) **N 42**

SI Units

Besieged by Torrs (C) **Ja 37**

The Building Industry and SI (BTR) **N 48**

The Elegance of SI (C) **D 45**

Heavenly Help for SI (C) **Je 47**

Metricomment (C) **My 43**

More Metricomment (C) **O 50**

More Metrics (C) **F 38**

One More Metric Voice (C) **O 50**

Protesting Dual Units (C) **Ja 34**

SI Comments (C) **F 39**

Steam and Air Tables in SI Units: Including Data for Other Substances and a Separate Mollier Chart for Steam (CB) **My 108**

Use SI or Whatever. . . (C) **D 45**

Sibley, L. B. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**

Siddall, J. N. An Orderly Approach to Design Decisions (76-DE-12) (A) **Ag 100**; A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) (A) **Mr 107**

Side Loaders

New Side-Loader (IF) **D 65**

Siegel, D. L. Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Siegelman, D. A Coupled 10-MW Arc Ablation-Erosion Test Facility (76-ENAs-66) (A) **N 95**

Siesennop, W. W. A Design Program Including Theory and Practice (76-DE-31) (A) **S 91**

Sieverding, C. Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **JI 98**; Model Tests for the Detailed Investigation of the Trailing Edge Flow in Transonic Turbine Cascades (76-GT-30) (A) **JI 90**

Signal Transit Velocities

Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) (A) **Je 108**

Signer, H. Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 x 10^6 DN (76-LubS-16) (A) **S 97**; Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) (A) **Ja 121**

Sigurdson, S. Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) (A) **My 97**

Sih, G. C. The Role of Fracture Mechanics in Design Technology (76-DET-58) (A) **N 103**; Scattering of Plane Waves by a Propagating Crack (75-WA/APM-11) (A) **Je 120**

Sikka, V. K. Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**

Silica

Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**

Silicon Carbides

Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**

Silicon Nitride Balls

The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-Lubs-8) (A) **S 96**

Silicone

Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**

Silicone Elastomers

Investigation of Silicone Elastomers as Ramburner Insulators (76-ENAs-49) (A) **N 92**

Silver, R. S. Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**

Simmons, B. F. Fire Article Sparks Controversy (C) **O 50**

Simmons, M. K. *(editor)* Annual Review of Energy (CB) **N 104**

Simon, J. M. Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**

Simons, D. A. Scattering of a Love Wave by the Edge of a Thin Surface Layer (75-WA/APM-24) (A) **JI 98**

Simons, J. L. Industrial Plant Siting (CB) **JI 101**

Simpson, J. Some Specific Problems and Findings in Open-End Spinning (76-Tex-8) (A) **N 96**

Simulated Ice Ingestion

Icing Problems—Review of Simulated Ice Ingestion Tests (76-GT-128) (A) **Ag 93**

Simulated Management Experience

A Model of Simulated Management Experience for Engineering Managers (75-WA/Mgt-5) (A) **Ap 96**

Simulated Stenosis

Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**

Simulation

The Role of Modeling and Simulation in the Design and Appraisal of Fluid Power Systems (76-DET-92) (A) **D 96**

Simulation and Field Observation of Heated Discharge Dispersion Patterns (75-WA/HT-61) (A) **My 103**

The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**

Simulation-Gaming

Simulation-Gaming in Energy Management Education (75-WA/Mgt-2) (A) **Ap 96**

Simulation Methods

A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) (A) **Mr 107**

Simulation Models

OILSIM—A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**

Sinclair, B. *(author)* Philadelphia's Philosopher Mechanics: A History of the Franklin Institute 1824–1865 (CB) **Ja 126**

Singh, B. S. Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**

Singh, D. V. Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**

Single Anchor Leg Mooring

Development of the Single Anchor Leg Mooring (75-Pet-44) (A) **Ja 117**

Single Drop Motion

Three-Step Model of Dispersed Flow Heat Transfer (Post CHF Vertical Flow) (75-WA/HT-1) (A) **Ap 99**

Single-Loop Controllers

Advances in Single-Loop Controllers **Ja 67**

Single-Shaft Gas Turbines

Approximately Calculating Optimum Pressure Ratios for Various Gas Turbine Cycles (76-GT-21) (A) **JI 89**

Singularities

Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**

Sinhasan, R. Externally Pressurized Oil Bearings—A Review (76-DET-94) (A) **D 96**

Sini, A. H. Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**

Sinkinson, A. W. California Nuclear Initiative (C) **F 39**

Sippl, C. J. *(author)* Calculator Users' Guide and Dictionary (CB) **O 106**

Sivaci, K. Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) (A) **Je 111**

Six-Link Mechanisms

Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**

Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**

Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**

Ski Equipment Carrier

Ski Carrier Carries Off Prize in Design Contest (EN) **D 75**

Skillman, E. P. Characteristics of Vacuum Wastewater Transfer Systems (76-ENAs-43) (A) **N 91**

Skimjet

Oil Slick Removal System (IF) **S 62**

Skimmer Devices

New Twist for Oil Spill Cleanup **F 28**

Skin Temperatures

Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**

Skinrood, A. C. Coming: Solar Power Plants **N 26**

Skirrow, G. *(editor)* Chemical Oceanography (CB) **Ag 104**

Skladany, J. T. Thermal Control of the International Ultraviolet Explorer (76-ENAs-38) (A) **O 97**

Skov, N. A. *(author)* The Pegasus Unit: Petroleum/Gasoline Substitute Systems (CB) **Ap 107**

Skylab Orbital Workshop

OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**

Skymapping

Skymapping High-Water Zones (BTR) **Je 63**

Slabs

Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**

Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**

Slag Friability

High-Temperature Corrosion in Gas Turbine and Steam

Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**

Slant-Angle Injection

Heat Transfer with Full-Coverage Film Cooling Using 30-Deg Slant-Angle Injection (75-WA/HT-11) (A) **Ap 100**

Slender Jobs

On Work Rests While Turning Slender Jobs (75-WA/Prod-21) (A) **Mr 103**

Slender Ships

Hydrodynamic Pressure Field on a Slender Ship Moving Over a High Frequency Wavy Shallow Bottom (76-APM-22) (A) **S 100**

Sletten, R. Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**

Slider-Crank Mechanisms

Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) (A) **N 98**

Elastodynamic Analysis of a Completely Elastic System (76-DET-32) (A) **N 100**

Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**

Sliding

The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding and Normal Motion—Part 1: Theory (76-LubS-6) (A) **S 96**; Part II: Experimental (76-LubS-10) (A) **S 97**

On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) (A) **S 100**

Sliding Contact

Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Sliding Point Contacts

On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**

Sliding Vane Machinery

State of the Art Review of Sliding Vane Machinery (76-DET-90) (A) **D 96**

Slip Cast Fused Silica

Rain Erosion Testing of Slip Cast Fused Silica at March 5 (76-ENAs-6) (A) **O 93**

Slip Factor

Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Slip-Line Fields

A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) (A) **S 100**

Slit Geometries

The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**

Slot Behavior

Onset of Separation in Film Cooling Following a Slot (75-WA/HT-16) (A) **Ap 101**

Slot Jets

Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**

Slots

Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**

Sludge

Effect of Nitrogen Limitation on Metabolic Activities of Activated Sludge (76-ENAs-40) (A) **O 97**

Scrubber Sludge Supports Vegetation (BTR) **Ap 55**

Sluzalis, L. L. Materials Consideration for the BIGAS Coal Gasification Pilot Plant (76-PVP-41) (A) **D 102**

Small, R. D. Axisymmetric Potential Flow Over Two Spheres in Contact (75-WA/APM-26) (A) **Ji 99**

Smart, C. The Elegance of SI (C) **D 45**

Smith, C. B. *(editor)* Efficient Electricity Use: A Practical Handbook for an Energy Constrained World (CB) **N 105**

Smith, C. O. Mr. Designer, Are You With It? (76-DET-82) (A) **D 94**

Smith, D. A. Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**

Smith, D. D. Disposal of Dredged Material—A Key Environmental Consideration in the Construction of Major Nearshore and Coastal Marine Facilities (75-WA/Pet-7) (A) **My 95**

Smith, E. M. Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**

Smith, L. H., Jr. Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) (A) **F 81**

Smith, M. L. Urban Solid Waste Processing—An Approach Developed by Continental Can Company, Inc. (76-ENAs-41) (A) **O 97**

Smith, P. R. Simulation of a Small Solar-Power Station (75-WA/Sol-4) (A) **Mr 93**; Simulation of Solar Heated Buildings (75-WA/Sol-10) (A) **Mr 93**

Smith, R. A. A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**

Smith, R. N. Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (75-WA/HT-56) (A) **My 102**

Smith, R. O. Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) (A) **S 98**

Smith, R. T. Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**; Wind-Powered Electric Utility Plants (75-WA/Pet-1) (A) **My 95**

Smith, R. V. Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**

Smith, T. F. Combined Radiation-Convection for a Real Gas (76-HT-58) (A) **O 104**

Smith, W. D. Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) (A) **N 102**

Smithsonian Institution

ASME—Smithsonian Archival Program: Expanding the Annals of Engineering (NR) **My 66**

Smogalev, I. P. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Smoke Consumption

The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**

Smoke Control

Towering Infernos (EN) **F 59**

Smoke Detectors

Sensitive Smoke Detector (BTR) **Je 62**

Smy, P. R. Toward Laser Engines (C) **D 46**

Snap-Action Mechanisms

Design Analysis of A Snap-Action Mechanism (76-DE-35) (A) **S 91**

Sneck, H. J. Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) (A) **Ja 120**

Snediker, D. K. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) (A) **Ja 120**

Snidle, R. W. Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**; A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**

Snoek, C. W. Heat Transfer from Inflatable Structures (75-WA/HT-97) (A) **Je 116**

Snotruk Transmission

The Snotruk Transmission—A Case Problem (76-DE-32) (A) **S 91**

Snyder, A. E. The Transfer of Intermediate Technology: A Challenge to the Multinational Company (76-DET-81) (A) **D 94**

Social Implications

Social Implications of Technology: An Economic Model Based on Efficiency (75-WA/Aut-2) (A) **Ap 93**

Societal Problems

Students to Conduct Studies on Environmental and Societal Problems (EN) **My 69**

Society for Advancement of Management

Frederick W. Taylor for Hall of Fame (NR) **Ap 68**

Society of Automotive Engineers

Symposium on Viscosity-Related Engine Performance, preview (NR) **My 64**

Society of Women Engineers

Society of Women Engineers: 25 Years of Progress (NR) **Ap 70**

Socio-Technical View

Can We Breach the Engineering-Politics Gap? **Ag 71**

Changing Times **Ap 79**

How to Make A Decision **F 65**

Idealists in a Real World **D 81**

The Last Vestiges of the Profession (CT) **S 77**

A Look at Energy Issues **Ja 69**

Look to Ohio **My 75**

On Minority Programs in Engineering Education **Je 87**

The New Engineers in ASME **Mr 79**

The Socio-Technical View **Ji 70**

Technology and Human Needs **N 73**

Unions for Engineers—The Only Way to Go **O 81**

Sodhi, D. S. Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) (A) **S 98**

Sodium

High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**

Sodium Check Valves

Fast Flux Test Facility Primary Sodium Check Valve (76-PVP-70) (A) **D 102**

Sodium-Cooled Fast Reactors

Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**

Sodium Heat

Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**

Soehrens, J. Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**

Soft Dies

Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**

Softening

A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) (A) **Je 111**

Software

The Software Center: How it Works (CT) **D 80**

Software Development, Maintenance, and Dissemination (CT) **Ap 78**

Software Hang-Ups (CT) **S 76**

Soil Models

Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) (A) **S 98**

Soil Properties

The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**

Soils

Unsteady Heat Conduction in Variable Conductivity Soils (75-WA/HT-89) (A) **My 106**

Solan, A. Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**

Solar Arrays

Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**

Solar Atmosphere

Sunquakes? (BTR) **N 51**

Solar Cells

Cheaper Solar Cells (ES) **S 18**

Solar Collectors

Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**

Black Chrome Makes an Efficient Collector (ES) **Ja 10**

Choice of Honeycomb Cell Size for Best Efficiency of a Flat-Plate Solar Collector (76-HT-42) (A) **O 102**

Design and Experimental Evaluation of a V-groove Solar Collector (76-HT-53) (A) **O 104**

Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**

Featherweight Solar Collector (BTR) **S 53**

Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**

A Shapely Collector (ES) **D 17**

A Wall to the Sun (BTR) **Ja 39**

Solar Energy

Computer Modeling of Heat Pumps and the Simulation of Solar-Heat Pump Systems (75-WA/Sol-3) (A) **Mr 93**

Construction and Evaluation of Linear Segmented Solar Concentrators (75-WA/Sol-6) (A) **Mr 93**

Cost Optimization of Solar Heating of Buildings in Northern

Regions (75-WA/Sol-9) (A) **Mr 93**
Dynamic Simulation for Performance Analysis of Solar Heated and Cooled Building (75-WA/Sol-8) (A) **Mr 93**
Energy Market Looking Up (BTR) **Ag 43**
Energy: The Solar-Hydrogen Alternative (CB) **Je 123**
Evaporator Design for Sea Solar Power Cycles (75-WA/Sol-5) (A) **Mr 93**
The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy (75-WA/Pet-3) (A) **My 95**
Handbook of Solar and Wind Energy (CB) **F 89**
Heat Transfer Analysis of a Cavity-Type Solar Radiometer (75-WA/Sol-2) (A) **Mr 92**
Low Cost Solar Augmented Heat Pump System for Residential Heating and Cooling (75-WA/Sol-7) (A) **Mr 92**
Plugging into the Sun (BTR) **O 56**
A Salty Heat Sink (ES) **Ja 10**
Simulation of a Small Solar-Power Station (75-WA/Sol-4) (A) **Mr 93**
Simulation of Solar Heated Buildings (75-WA/Sol-10) (A) **Mr 93**
Solar Age Nudged Forward (BTR) **Je 52**
Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**
Solar Energy for Space Heating with Heat Pump **O 33**
A Solar Heating System for a Northern New Mexico Adobe House (75-WA/Sol-11) (A) **Mr 94**
A Solar Squabble (ES) **My 16**
Solar "Townhomes" (BTR) **F 41**
Sun Power: Major Obstacle Under Attack (BTR) **D 59**
Sun-Powered Refrigeration (BTR) **D 59**
A Theory of Concentraors of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) (A) **Mr 92**
Words from Washington **Je 74**
Works Good, Tastes Good (C) **Mr 46**
Zoning Sunlight (ES) **S 18**

Solar Engines
Backyard Solar Engine (BTR) **Mr 47**

Solar Heating
Solar Heating a Commercial Reality (BTR) **My 54**
A Solar System for Your Home (ES) **Je 18**

Solar Heating/Cooling
Solar Heating and Cooling Engineering, Practical Design, and Economics (CB) **Ap 107**

Solar Homes
NASA "House of the Future" (BTR) **My 46**

Solar Power
Refrigerator Draws Power from Solar Cells (BTR) **Ag 50**

Solar Power Plants
Coming: Solar Power Plants **N 26**

Solar Products
A Basis for Solar Products (ES) **S 18**

Solar Systems
Two Turn to Solar Systems (ES) **F 15**

Solbrig, C. W. Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**

Soler, A. I. Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**; Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) (A) **Ag 100**

Solid Radwaste
Liquid and Solid Radwaste Experience at the Nine Mile Point BWR (75-Pwr-9) (A) **Ja 111**
Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**

Solid Spheres
Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**

Solid Surfaces
Inception of Cavitation from a Solid Surface (75-WA/DE-13) (A) **Mr 104**
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**

Solid Waste
Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**
Energy from Solid Waste: An Update (NR) **Ja 52**
Foundry Wastes vs. the Law (BTR) **O 57**
From Waste to Resource through Processing **Jl 71**
Fuel City (EN) **Je 80**
Gasification of Solid Waste in Fixed Beds **Jl 24**
Solid Waste Disposal—Facts vs. Fiction **My 76**
Solid Waste Futures (ES) **Jl 16**
There's a Lot of Garbage to Burn (ES) **Ja 10**

Solid Waste Management
The Technology of Solid Waste Air Classification for Resource Recovery (76-ENAs-50) (A) **N 92**

Solid Waste Processing
Urban Solid Waste Processing—An Approach Developed by Continental Can Company, Inc. (76-ENAs-41) (A) **O 97**

Solid Waste Recovery
Forecasting Impacts on Solid Waste Resource Recovery Systems (76-ENAs-46) (A) **O 97**

Solid Waste Utilization
For More Facts, Less Fiction (C) **Jl 41**

Solid Wires
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**

Solids
Nuclear Tracks in Solids: Principles and Applications (CB) **F 89**

Solids Separation
Development of a Technique to Provide a Predictable Solids Separation with the Rotary Mud Separator (75-Pet-31) (A) **Ja 116**

Soluble Materials
Soluble Material Handling Device (IF) **Je 67**

Sommer, E. Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**

Sommerlad, R. E. The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**

Son, N. N. Film Cooling—The Effect of a Cold Jet Normal to the Coolant Layer (75-WA/GT-4) (A) **F 80**

Sonar-Like Systems
Transparently Opaque (BTR) **Ap 54**

Soni, A. H. Effective Role of Trade Magazines in Design Technology Transfer (76-DET-106) (A) **D 97**; Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**; Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**; Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**; Synthesis of a Planar Four-Bar Crank-Rocker Mechanism with Elastic Links (76-DET-73) (A) **D 94**; Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**

Sonic Inlets
An Automatic Control System for Sonic Inlets (75-WA/Aut-1) (A) **Ap 93**

Sonic Velocity Measurements
Two-Phase Sonic Velocity Measurementts for Separated Flow (75-WA/HT-34) (A) **Ap 103**

Soo, S. L. Power Spray Cooling-Unit and System Performance (75-WA/Pwr-8) (A) **F 84**

Souders, M. *(editor)* Handbook of Engineering Fundamentals (CB) **Mr 108**

Sound Attenuation
On the "In-Situ" Control of Acoustic Liner Attenuation (76-GT-61) (A) **Jl 94**

Sound Power Levels
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**

Southwick, W. O. Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**

Soylemez, E. The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A5 **N 97**

Sozzi, G. L. Blowdown Heat Transfer Phenomena in the Scaled BWR Test System (76-HT-7) (A) **O 98**

Space Heating
Solar Energy for Space Heating with Heat Pump **O 33**

Space Industrialization
Factories in the Sky (BTR) **Ag 49**

Space Probe Tests
Space Probe Tests Einstein's "Equivalence Principle" (BTR) **S 56**
Space Probes of Future (BTR) **O 56**

Space Processing Application Experiments
Auxiliary Payload Power System Thermal Control (76-ENAs-59) (A) **N 93**

Space Research
Planning for Biomedical Research in Space: The Visiting Research Scientist (76-ENAs-67) (A) **N 94**
Planning for Life Sciences Research in Space (76-ENAs-52) (A) **N 92**

Space Sciences
Life on Mars? (BTR) **Ag 44**

Space Shuttle Astronauts
Astronauts Needed (BTR) **S 55**

Space Shuttle Orbiter
Vibration Detection of Component Operability (76-ENAs-18) (A) **O 95**

Space Shuttles
The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**
Environmental Parameters of Shuttle Support for Life Sciences Experiments (76-ENAs-24) (A) **O 96**
. . .And Landing System (BTR) **N 45**
Microbiology Studies in the Space Shuttle (76-ENAs-23) (A) **O 95**
Operational Plans for Life Science Payloads—from Experiment Selection Through Postflight Reporting (76-ENAs-63) (A) **N 94**
Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**
The Role of Shuttle in Health Care Systems Development for Space Stations (76-ENAs-29) (A) **O 96**
Space Shuttle's Heat Shield. . . (BTR) **N 44**

Space Stations
Space Colonies by 1980s? (BTR) **Ap 51**

Space Technology
Treading on Icy Territory (NB) **Ag 60**

Space Wash Water
Experimental Study of the Constituents of Space Wash Water (76-ENAs-11) (A) **O 94**

Spacecraft
Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**
Development of a Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**

Spaceflight
The Development of A Biological Specimen Holding Facility for Spaceflight (76-ENAs-16) (A) **O 94**

Spacelab Environmental Control
Spacelab Environmental Control System (76-ENAs-58) (A) **N 93**

Spacelab Experiments
Organism Support for Life Sciences Spacelab Experiment (76-ENAs-17) (A) **O 95**

Spacelab Mission Simulation
Spacelab Mission Simulation—II (76-ENAs-22) (A) **O 95**

Spacelab Proposals
Seek Spacelab Proposals (BTR) **D 50**

Spadaccini, L. J. Autoignition Characteristics of Hydrocarbon Fuels at Elevated Temperatures and Pressures (76-GT-3) (A) **Jl 87**

Spalding, D. B. Numerical Computation of Flow in Rotating Ducts (75-FE-25) (A) **S 95**; Transfer of Heat in Rotating Systems (76-GT-25) (A) **Jl 89**

Sparing, W. H. More Metrics (C) **F 38**

Spark Advance
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor (75-WA/Aut-17) (A) **Ap 94**

Sparks, N. The Application of Gas- and Oil-Lubricated Foil Bearings for the ERDA/Chrysler Automotive Gas Turbine Engine (76-GT-115) (A) **Ag 91**

Sparrow, E. M. Elections to Fellow Grade **D 91**

Sparse Matrices
A Sparsity-Oriented Approach to the Dynamic Analysis and Design of Mechanical Systems—Part 1 (76-DET-19) (A) **N 98**; Part 2 (76-DET-20) (A) **N 98**

Spatial Mechanisms
Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**
A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) (A) **N 101**
Displacement Analysis of Spatial Seven-Link 5R-2P Mechanisms (76-DET-39) (A) **N 100**
Existence Criteria of Two-Loop Six-Link Mechanisms With Two General Constraints (76-DET-64) (A) **D 92**
Existence Criteria of Two-Loop Six-Link R-R-C-C-R-C-C Spatial Mechanism (76-DET-38) (A) **N 101**
Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**

Specific Fuel Consumption
Improved Specific Fuel Consumption of Open Cycle Gas

Turbines by Utilization of Waste Heat (76-GT-45) (A) **JI 92**

Specimen Thickness
The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**

Speckhart, F. H. Wood Planar Noise (75-WA/PID-6) (A) **My 97**

Spectrometers
Versatile IR Spectrometer (BTR) **N 52**

Spectrophotometric Methods
Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**

Specular Cavities
The Effect of Radiation Trapping Within the Specular Cavity Formed by the Shuttle Forward Radiators and Payload Bay Door (76-ENAs-55) (A) **N 93**

Speed Limits
Limit Limits? (C) **Ja 34**

Speed Ratios
A Two-Path Variable-Ratio Transmission With an Extended Range of Ratios (76-DET-37) (A) **N 100**

Spence, N. C. An Approach to Air Quality Assessment for the Siting of a Large Fossil Fueled Power Plant (75-WA/APC-10) (A) **Je 114**

Spent Fuel Rods
Wrapping Up the Nuclear Fuel Cycle—Part 1: Reprocessing Nuclear Power's Spent Fuel **D 32**

Sperman, J. H. Taking Out the Garbage (C) **S 48**; Who Craves Caves? (C) **D 45**

Sperry, R. E. Some Adverse Effects of Stress Corrosion in Steam Turbines (76-IPC-Pwr-8) (A) **S 93**

Spheres
Axisymmetric Potential Flow Over Two Spheres in Contact (75-WA/APM-26) (A) **JI 99**
On the Creep Rupture of a Tube and a Sphere (75-WA/APM-4) (A) **Je 119**
Heat Transfer from Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) (A) **My 102**

Spherical Cavities
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) (A) **S 100**

Spherical Four-Link Mechanisms
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**

Spherical Hulls
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) (A) **Ap 91**

Spherical Motion
Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) (A) **N 100**

Spherical Shell Windows
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) (A) **Ap 91**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**

Spherical Shells
The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in a Rigid Spherical Shell—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**
A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**
Thermal Stress Analysis of Thin, Spherical Shells (76-DET-104) (A) **D 97**

Spherical Surfaces
Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) (A) **S 98**

Spherical Waves
Reflection and Transmission of Elastic-Plastic Spherical Waves at a Spherical Interface (75-WA/APM-23) (A) **Je 121**

Spherically Hollow Balls
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) (A) **Ja 119**

Spin Tests
Program Plan for the Design and Spin Test of Ceramic Blade-Metal Disk Attachments (76-GT-37) (A) **JI 91**

Spindle Centering
Effects of Spindle Centering on Ring-Spinning Tension (76-Tex-2) (A) **N 95**

Spine Fins
Analysis of Large Dry Cooling Towers with Spine-Fin Heat Exchange Elements (75-WA/HT-46) (A) **My 100**

Spinning Frame Noise
Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

Spiral Groove Bearings
Self-Pressurizing Seals Keep Submersible Motors Dry **F 20**

Spiral Groove Seals
Seal Development for Large, Submersible Electric Motors (75-Lub-17) (A) **Ja 119**

Spiral Wires
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**

Spitze, L. A. The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**

Sponseller, D. L. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**

Spray Cooling
Reflood and Spray Cooling Heat Transfer in PWR and BWR Bundles (76-HT-10) (A) **O 98**

Spray Ponds
Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**

Spring Design Nomographs
Brief Survey of Spring Design Nomographs (76-DET-77) (A) **D 94**

Spring Parameters
Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**
Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**

Spring-Powered Reels
It's the "Reel" Thing (BTR) **Ap 58**

Spur Face Gears
Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**

Spur Gears
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**
On the Elastokinematics of the Involute Gear Pair (76-DET-34) (A) **N 100**
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**

Square Edged Orifices
Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**

Squeeze Film Bearings
Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) (A) **Ja 123**

Squeeze Film Dampers
Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **JI 93**

Squeeze Films
Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) (A) **Ja 122**
Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**

Sridhar, B. N. Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) (A) **S 92**

Sridhar, K. Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) (A) **Je 115**

Srinivasan, M. G. Reflection and Transmission of Elastic-Plastic Spherical Waves at a Spherical Interface (75-WA/APM-23) (A) **Je 121**

Srivastava, N. S. Application of Cross-Correlation Technique to the Casing Noise Investigation of a High Powered Diesel Engine (75-WA/DGP-3) (A) **F 84**

Stability
Analytical and Experimental Investigation of the Stability of Intershaft Squeeze Film Dampers Part 1: Demonstration of Instability (76-GT-55) (A) **JI 93**

Stability Analysis
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**
Stability of Cyclic Dynamical Systems (75-WA/Aut-13) (A) **Ap 94**
On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Stachiw, J. D. Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) (A) **Ap 91**; NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) (A) **Ap 91**; Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**

Stack Emissions
A Practical Review of the Cause and Control of Cold End Corrosion and Acidic Stack Emissions in Oil-Fired Boilers (75-WA/CD-8) (A) **My 99**

Stack Sampling
Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**

Stainless Steel Tubes
The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**

Stainless Steel Valves
Imports—A Continuing Threat (NB) **JI 63**

Stainless Steels
Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**
Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) (A) **Ap 97**
Elevated Temperature Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**
Evaluation of Hold-Time Effect in Fatigue at Elevated Temperature on a Stainless Steel (75-WA/PVP-17) (A) **Ap 98**
Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**

Standard Forged Gears
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**

Standards Development
Proposed Bill Would Regulate Voluntary Standards **S 81**

Stanton, G. B., Jr. The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) (A) **Ap 96**

Staph, H. E. But Not Our Readers (C) **N 42**

Staple Yarns
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) (A) **Ja 124**

Stargardter, H. Optical Determination of Rotating Fan Blade Deflections (76-GT-48) (A) **JI 92**

Stark, P. A. (author) Computer Programming Handbook (CB) **F 89**

Starkman, E. S. Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

State Legislators
A Pleasant Surprise (C) **Ja 36**

Static Analysis
Reverse Flow in Fluidic Amplifiers Due to Piston Type Loads: A Static Analysis (75-WA/Flcs-5) (A) **Je 115**

Static Characteristics
Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) (A) **Je 115**

Static Seals
Static and Dynamic Seals: Part I—Static Seals (76-DET-83) (A) **D 95**

Statics
Analysis of the Effect of Errors and Clearances in Mechanisms as a Problem in Statics (76-DET-67) (A) **D 93**

Stationary Disks
Non-Axisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) (A) **Je 109**

Statistical Methods
Re-analysis of Cruciform Specimen Fatigue Results by Statistical Methods (75-Pet-46) (A) **Ja 118**

Statistical Modeling
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) (A) **Ap 93**

Statistical Models
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) (A) **Mr 107**
Statistical Models in Applied Science (CB) **My 108**

Staub, F. W. Elections to Fellow Grade **Mr 91**

Stauffer, T. R. An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**

Steady-State Solutions
Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings. Steady-State Solution (75-Lub-24) (A) **Ja 121**

Steam
Steam and Air Tables in SI Units; Including Data for Other Substances and a Separate Mollier Chart for Steam (CB) **My 108**

Steam Boilers
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**. Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**

Steam Ejectors
Pressure-Distribution Data for Steam Ejectors (75-WA/PID-3) (A) **My 96**

Steam Flow
Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**

Steam Generators
Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**
A Heavy Fuel Fired Heat Recovery Steam Generator for Combined Cycle Applications (75-Pwr-30) (A) **Ja 114**
LMFBR Steam Generator Areas Requiring Special Attention (75-WA/HT-104) (A) **Je 116**
The Load Exerted Onto the Header Stubs of Large Steam Generators in the System "Boiler Wall-Header-Piping" (76-PVP-65) (A) **D 104**
Modifications to Ormond Beach Steam Generators for NO_x Compliance (75-WA/Pwr-9) (A) **F 86**
A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) (A) **My 99**
Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**
On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Steam Pocket Formation
Steam Pocket Formation from a Simulated Nuclear Excursion in a Water-Moderated Reactor Mockup (75-WA/HT-30) (A) **Ap 103**

Steam Turbine Failure
Steam Turbine Diaphragm Failure (75-Pet-49) (A) **Ja 118**

Steam Turbine Generators
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**

Steam Turbines
BBC Steam Turbines—75 Yr (IF) **O 65**
Calculated First Critical Speeds in Process Steam Turbines (75-WA/PID-8) (A) **My 97**
Defects and Fracture Strength of Large Rotor Forgings for Steam Turbines (75-Pwr-10) (A) **Ja 111**
Largest Turbine Test Lab (BTR) **S 54**
Proven Operational Performance of Low-Speed Two-Stroke Crosshead Engines in Marine Service (76-DGP-11) (A) **Ag 98**
Some Adverse Effects of Stress Corrosion in Steam Turbines (76-IPC-Pwr-8) (A) **S 93**
Steam Turbine Noise—A Status Report (75-Pwr-7) (A) **Ja 111**

Steam Viscosity
New Values for the Viscosity of Water Substance **Jl 79**

Steam Whirl
Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**

Steam-Ejector Performance
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) (A) **My 96**

Steam-Electric Power Plants
Waste Heat Management of Steam-Electric Power Plants (76-ENAs-44) (A) **N 91**

Steamline Curvature
Effect of Steamline Curvature on Film Cooling (76-GT-90) (A) **Jl 97**

Steam-Water Flow
Friction Factors and Regime Transitions in High Pressure Steam-Water Flows (75-WA/HT-4) (A) **Ap 99**
Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Steel Contacts
On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) (A) **S 97**

Steel Industry
Steel Industry in Trouble? (NB) **S 68**

Steel Plates
Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**

Steel Production
Steel Production Will Reach 96 Tons (NB) **D 73**

Steelmaking Process
Q-BOP Steelmaking Process (BTR) **My 55**

Steelmaking Waste Products
New Facility to Convert Mill Wastes (NB) **Ag 60**

Steels
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**. Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**
Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) (A) **Mr 106**
The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**
The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**
Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Steels for Power Plants **Ja 26**
Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**

Steel-Wheeled Vehicles
Rubber-Tired Rapid Transit—Part 2: Technical Characters **Je 39**

Steffens, J. Nuclear Reactions (C) **Ap 46**

Stegman, R. L. Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Stein, R. L. Transferring Technology to Make Mining Safer: The Bureau of Mines' Approach (76-ENAs-5) (A) **O 93**

Stein, Y. Y. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Steiner, J. E. Autofrettaged Wire-Wrapped Pressure Vessels (76-PVP-47) (A) **D 103**

Steiner, M. L. The Use of Simulation and Optimization in the Design of Rail Transportation Systems (76-DET-87) (A) **D 95**

Steinfeld, J. I. Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**

Stenner, J. R. Application Experience with Codes and Standards in the Design of Heat Exchangers for Liquid Metal and Gas Cooled Reactor Systems (75-Pwr-16) (A) **Ja 112**

Stenosis
Hemodynamic Flow in the Region of a Simulated Stenosis (75-WA/Bio-10) (A) **Mr 100**

Step Bearings
Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) (A) **Ja 122**

Stepner, D. E. Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**

Stereoscopic Instrumentation
Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**

Stewart, J. E. Solid Radwaste Experience in Europe Using Asphalt (75-Pwr-21) (A) **Ja 113**

Stewart, N. D. Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

Stewart, P. A. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**

Stewartson, K. Boundary-Layer Similarity Near the Edge of a Rotating Disk (75-WA/APM-3) (A) **Je 119**

Stick-Slip
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**

Stiffler, A. K. Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) (A) **Je 108**

Stochastic Characterization
Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**

Stochastic Tool-Life Models
Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**

Stock, D. E. The Particle-Source-In-Cell (PSI-Cell) Model for Gas-Droplet Flows (75-WA/HT-25) (A) **Ap 102**

Stocker, N. L. Advanced Labyrinth Seal Design Performance for High Pressure Ratio Gas Turbines (75-WA/GT-22) (A) **F 83**

Stocks
Stocks as Investments (PS) **Mr 77**

Stoichiometric Data
Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Jl 87**

Stokes Flow
Axisymmetric Stokes Flow Past Cones Including the Case of the Needle (75-WA/APM-2) (A) **Je 119**

Stokey, W. F. The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**

Stoll, O. T. The Shuttle Orbiter Airlock Support Subsystem (ALSS) (76-ENAs-53) (A) **N 92**

Stone, C. C. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**

Stoneking, J. E. Design Analysis for a Large Pipeline Bifurcation (76-PVP-15) (A) **D 99**

Storage Tanks
Analysis of Bottom Entry Nozzles for Atmosphere Storage Tanks (75-Pet-23) (A) **Ja 115**

Storm Waves
Storm Wave Model (NB) **Jl 63**

Storment, J. W. Meeting OSHA Noise Criteria in a Central Utility Plant of a Large Manufacturing Facility (75-WA/SAF-2) (A) **Je 117**

Story, J. M. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) (A) **Mr 102**

Straight Pipes
Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**. Part II: Pipe Pressures (76-PVP-14) (A) **D 99**

Straight-Line Motion
Approximate Straight-Line Motion from Simple Spatial Mechanisms (76-DET-7) (A) **N 97**

Straight-Line Paths
Computerized Synthesis of Straight-Line Four-Bar Linkages From Inflection Circle Properties (76-DET-27) (A) **N 100**

Strain Range Partitioning
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**
Application of Strainrange Partitioning to the Prediction of Creep-Fatigue Lives of AISI Types 305 and 316 Stainless Steel (76-PVP-26) (A) **D 100**

Strange, R. R. Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**

Stratified Charge Engines
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) (A) **F 84**

Streamline Curvature Models
A Centrifugal Compressor Flow Analysis Employing a Jet-Wake Passage Flow Model (76-FE-21) (A) **Ag 96**
Performance Evaluation of a Multistage Axial Compressor Using a Streamline Curvature Model (75-WA/GT-10) (A) **F 82**

Stress Analysis
Finite Element Alternatives in Axisymmetric Stress Analysis (76-DE-3) (A) **Ag 99**
Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**

Stress Corrosion
Some Adverse Effects of Stress Corrosion in Steam Turbines

(76-IPC-Pwr-8) (A) **S 93**

Stress Cracking
Estimation From Censored, Interval Data of the Median Breaking Point of Polyethylene Subjected to Stress-Cracking Tests: A Monte Carlo Study (75-WA/APM-9) (A) **Je 120**

Stress Evaluations
Secondary Stress Evaluation at a Singularity (76-PVP-67) (A) **D 104**

Stress Factors
Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**

Stress Intensity Factors
Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**
Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**
On Through Cracks at Interference Fit Fasteners (76-PVP-5) (A) **D 98**

Stress Limits
Stress Limits for Class 2 and Class 3 Components Under Upset, Emergency, and Faulted Conditions (76-PVP-61) (A) **D 104**

Stress Pulses
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) (A) **S 100**

Stress Ratio
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**
The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**

Stress Relaxation
Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) (A) **F 87**

Stress Singularities
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**

Stresses
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**
Cyclic Distortions and Stresses in 36-In. Wheels Under Combined Service Loads (75-WA/RT-5) (A) **F 77**
Extension Springs—Stress at the Body Radius (76-DE-18) (A) **Ag 101**
Procedure for the Determination of Thermal Stresses in 3-Shell Junctions Common to Pressure Vessel Construction (76-PVP-53) (A) **D 103**
Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**
Stress in Integral Flange and Pressure on Gasket Seat for Line Pipe (76-PVP-59) (A) **D 104**
Stresses in an Adhesive Lap Joint (75-WA/DE-18) (A) **Mr 106**
Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**
Stresses in Ventricular Wall (76-APM-31) (A) **O 104**

Strevel, D. G. The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**

Stribula, M. R. Simulation-Gaming in Energy Management Education (75-WA/Mgt-2) (A) **Ap 96**

Stricker, P. A. Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-14) (A) **Ap 92**; Analysis of Active-Passive Motion Compensation Systems for Marine Towing Applications (75-WA/OcE-13) (A) **Ap 92**

Strigner, P. L. Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**

Strip Mines
An Answer for Orphaned Strip Mines (ES) **Mr 18**
Mining with Conscience? (EN) **Ap 72**
Satellite "Sees" Strip Mines (BTR) **O 57**

Strip Rolling
A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) (A) **Ja 122**

Stripwise Heating
Analysis of Established Natural Convection Due to Stripwise Heating on a Horizontal Surface (76-HT-19) (A) **O 100**

Strobe Lights
Strobe Lights for Quality Control (BTR) **N 53**

Strong, A. B. A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**

Structural Deformations
Fracture in Straight Pipes Under Large Deflection Conditions—Part 1: Structural Deformations (76-PVP-9) (A) **D 98**

Structural Equivalency
Structural Equivalency Between Plastic and Steel (76-DE-4) (A) **Ag 100**

Structural Reliability
Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**

Studerus, C. J. Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**

Stumbar, J. P. Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **JI 87**

Subhotin, V. I. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**

Subchannels
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**

Subcooled Water
Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

Submarine Warfare
Submarine Warfare: General Washington's Secret Weapon **D 18**

Submarines
CO Removal from Submarines Atmospheres by IR-45: Feasibility Study (76-ENAs-4) (A) **O 92**
The Growing Market for Commercial Submarines **O 28**

Submerged Arc Welding
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**

Submersible Electric Motors
Seal Development for Large, Submersible Electric Motors (75-Lub-17) (A) **Ja 119**

Submersible Motors
Self-Pressurizing Seals Keep Submersible Motors Dry **F 20**

Submersibles
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) (A) **Ap 90**

Suboptimal Regulators
On the Design of Suboptimal Regulators for Linear Distributed Systems (75-WA/Aut-9) (A) **Ap 94**

Subramanian, T. L. An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**

Subsidy Policies
The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy (75-WA/Pet-3) (A) **My 95**

Subsonic Aircraft
Status Report—Subsonic Aircraft Noise Reduction (76-GT-116) (A) **Ag 91**

Subsonic Commercial Transports
Advanced Acoustic Nacelle Concepts (76-GT-35) (A) **JI 90**

Subsonic Diffusers
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**

Substitute Natural Gas
The Shell Gasification Process for Synthesis Gas for Manufacture (75-WA/Fu-2) (A) **My 94**

Subsurface Ice Thickening
A Heat Sink Concept for Subsurface Ice Thickening (75-WA/HT-96) (A) **My 105**

Subterrene Penetrators
Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) (A) **My 104**

Subway Trains
Regenerative Drive for Subway Trains Part 1: Mechanical Accumulator Design (76-RT-1) (A) **S 94**; Part 2: Overall System Model (76-RT-2) (A) **S 94**; Part 3: System Evaluation (76-RT-3) (A) **S 94**; Part 4: Overall System Performance (76-RT-4) (A) **S 94**

Sucec, J. Prediction of the Trajectory of a Turbulent Jet Injected into a Crossflowing Stream (76-FE-8) (A) **Ag 94**

Suction
Active Suction Affixed Handhold/Equipment Mount (75-WA/OcE-12) (A) **Ap 92**

Suh, N. P. Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**

Sulfidation
Fighting Sulfidation with a Chromium Bearing Fuel Additive (76-GT-82) (A) **JI 96**

Sulfidation Control
Gas Turbine Air Filtration—A Means of Sulfidation Control (76-GT-59) (A) **JI 93**

Sulfide Stress Cracking
The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) (A) **Ja 117**
An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**
Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**

Sulfur Removal
Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**

Sulkin, M. A. Rubber-Tired Rapid Transit—Part 1: System Concepts **My 26**; Part 2: Technical Characters **Je 39**; Transit Question (C) **N 42**

Sullivan, A. M. Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) (A) **Ap 98**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) (A) **Ap 99**; The Effect of Specimen Thickness Upon the Fatigue Crack Growth Rate of A516-60 Pressure Vessel Steel (76-PVP-57) (A) **D 104**

Sullivan, D. A. A Critical Review of NO_x Correlations for Gas Turbine Combustors (75-WA/GT-7) (A) **F 80**; A Simple Gas Turbine Combustor NO_x Correlation Including the Effect of Vitiated Air (76-GT-5) (A) **JI 86**

Sulzer's Gas Turbine
New Economic Gas Turbine (IF) **F 52**
Type 3—Sulzer's New 5-MWe Gas Turbine (76-GT-33) (A) **JI 90**

Sumi, Y. Development of The Nissan YTP-12 Gas Turbine Engine (76-GT-101) (A) **Ag 90**

Summersby, J. Alaskan Connection Appreciated (C) **Ja 37**

Sun, C. L. On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Sun, C. T. Dynamic Response of Anisotropic Laminated Plates Under Initial Stress to Impact of a Mass (75-WA/APM-10) (A) **Je 120**

Sundararagan, C. Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (75-WA/APM-29) (A) **JI 99**

Sundgren, B. *(author)* Information Systems Architecture (CB) **My 108**

Sunlight
Sunlight May Power a Hydrogen Economy (BTR) **My 46**

Sunlight Filters
Weather Forecasting Looks to the Sun (BTR) **D 56**

Sun-Powered Refrigeration
Sun-Powered Refrigeration (BTR) **D 59**

Sunwalls
A Wall to the Sun (BTR) **Ja 39**

Suo, M. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) (A) **F 82**

Suo-Anttila, A. J. Large Amplitude Cellular Convection (76-HT-32) (A) **O 101**

Suokas, L. A. Regenerative Drive for Subway Trains Part 1: Mechanical Accumulator Design (76-RT-1) (A) **S 94**; Part 2: Overall System Model (76-RT-2) (A) **S 94**; Part 3: System Evaluation (76-RT-3) (A) **S 94**; Part 4: Overall System Performance (76-RT-4) (A) **S 94**

Superalloys
Effects of C and Mf Concentration on the Mechanical Properties of Wrought Superalloys Based on NASA IIB-11 Produced from Prealloyed Powders (76-GT-112) (A) **Ag 91**
The Potential of Oxide Dispersion Strengthened Superalloys for Advanced Gas Turbines (76-GT-118) (A) **Ag 91**
Progress in Manufacturing Practices for a Warm-Worked Superalloy (76-GT-110) (A) **Ag 90**

Superconducting Cables
Power Transmission via the Superconducting Cable **Ja 20**

Superconductive Propulsion Motor
Superconductive Propulsion Motor Development at NSRDC (75-WA/OcE-8) (A) **Ap 91**
Supercritical Fluids
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**
Supercritical Unit Availability
Supercritical Unit Availability Six-Year Case History (75-Pwr-25) (A) **Ja 113**
Superheat
Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Superheated Steam
The Btu's in Refuse (BTR) **D 55**
Superheavy Elements
New "Superheavy" Elements (NB) **S 68**
Superheavy Elements and Giant Halos (BTR) **S 52**
Superports
What Price the Superport? (BTR) **Ja 46**
Supersonic Air Ejectors
A Simplified Procedure for Designing Supersonic Air Ejectors (76-DET-98) (A) **D 96**
Supersonic Compressor Cascades
A Simple Method for Supersonic Compressor Cascading Performance Prediction (76-GT-64) (A) **Jl 94**
Supersonic Cruise Flight Conditions
Measurement of Exhaust Emissions from Two J-58 Engines at Simulated Supersonic Cruise Flight Conditions (76-GT-8) (A) **Jl 87**
Supersonic Nozzles
Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**
Supersonic Transports
Of SSTs, Ozone, and Skin Cancer (BTR) **Mr 48**
Suppression
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**
Surface Absorption
The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**
Surface Characterization
Current Advances in Surface Characterization (76-DET-88) (A) **D 95**
Surface Cracks
Inner and Outer Cracks in Internally Pressurized Cylinders (76-PVP-6) (A) **D 98**
Surface Curvature
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**
Surface Discontinuity
Channel Flow Over a Smooth-to-Rough Surface Discontinuity with Zero Pressure Gradient (76-FE-4) (A) **Ag 94**
Surface Durability
Influence of Addendum Correction on the Surface Durability of Gears (76-DET-65) (A) **D 93**
Surface Durability Ratings for On-Center and Off-Set Spur Face Gears (75-PTG-4) (A) **Ja 114**
Surface Fatigue Life
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**
Surface Grinding
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) (A) **Mr 101**
Surface Heat Balance
The Surface Balance in Simulations of Permafrost Behavior (75-WA/HT-86) (A) **My 105**
Surface Heaters
Semi-Transport Gold Film as Simultaneous Surface Heater and Resistance Thermometer for Nucleate Boiling Studies (76-HT-64) (A) **N 89**
Surface Injection
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Surface Integrity
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) (A) **Ap 105**
Surface Layers
Scattering of a Love Wave by the Edge of a Thin Surface Layer (75-WA/APM-24) (A) **Jl 98**
Surface Roughness
Gas Turbine Blade Heat Transfer with Rough Surfaces (75-WA/HT-107) (A) **Je 117**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) (A) **S 96**
Surface Sublayers
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) (A) **Mr 101**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**
Surface Temperature Measurement
Surface Temperature Measurement Using Electroplated Thermocouples (75-WA/TM-2) (A) **My 96**
Surface Type Boilers
Heat Transfer Characteristics of a Surface Type Direct Contact Boiler (76-HT-26) (A) **O 101**
Surface-Oriented Coordinates
Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**
Surge
The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **Jl 98**
Suryanarayana, N. V. Solar Energy for Space Heating with Heat Pump **O 33**
Suspension Systems
Fluidically Controlled Active Suspension Systems for High Speed Ground Vehicles (75-WA/Flcs-6) (A) **Je 115**
Sutherland, G. H. Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (76-WA/DE-21) (A) **Mr 106**; Mixed Exact-Approximate Planar Mechanism Position Synthesis (76-DET-29) (A) **N 99**
Suvorov, M. YA. Measurement of Some Characteristics of a Steam-Water Flow in a Round Tube at Pressures of 70 and 100 Atm (75-WA/HT-21) (A) **Ap 101**
Suzuki, A. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) (A) **S 95**
Swaging
Metal Flow in Two-Die Swaging (75-WA/Prod-23) (A) **Ap 104**
Swain, K. Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **Jl 89**
Sweat, V. E. A Miniature Thermal Conductivity Probe for Foods (76-HT-60) (A) **N 88**
Swedlow, J. L. Nuclear Notes (C) **My 42**
Sweet, L. M. Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Swift, R. A. Research Tests (75-Pet-47) (A) **Ja 118**
Swirl-Can Combustors
Swirl-Can Combustor Performance to Near-Stoichiometric Fuel-Air Ratio (76-GT-10) (A) **Jl 87**
Swirling Flow
An Experimental Investigation of the Swirling-Flow Performance of an Annular Diffuser at Low Speed (75-WA/FE-17) (A) **Je 110**
Switching Elements
The Multiport Lever: A Mechanical Logical Element (76-DET-11) (A) **N 97**
Switchyards
Computer-Controlled Switchyard (IF) **O 64**
Syamala Rao, B. C. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**
Sykes, J. L. Teaching Engineering Design in a Developing Industrial Community—The Hong Kong Situation (76-DE-20) (A) **Ag 101**
Symmetric Elastic Supports
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) (A) **Ag 101**
Symonds, P. S. On an Extremum Principle for Mode Form Solutions in Plastic Structural Dynamics (75-WA/APM-6) (A) **Je 119**
Synchronization Devices
Eliminating Unwanted Vibration (BTR) **S 52**
Synodis, S. T. Development of the Single Anchor Leg Mooring (75-Pet-44) (A) **Ja 117**
Synthetic Coal Gas
Modeling and Measurement of NO_x Emissions from Burning Synthetic Coal Gas in Gas Turbine Combustors (75-WA/GT-3) (a) **F 80**
Synthetic Cutting Fluids
Synthetic Cutting Fluids (IF) **F 53**
Synthetic Fuels
Support for Synthetic Fuels (ES) **O 19**
Synthetic Fuels and Cancer (ES) **Ap 23**
Synthetic Natural Gas
Substitute Natural Gas: Manufacture and Properties (CB) **O 106**
Synthoil Process
New Catalysts for Synthoil (BTR) **N 53**
System Rotation
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) (A) **Ag 95**
Systems Analysis
Systems Analysis and Design for Safety (CB) **N 104**
Szakovits, R. J. Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) (A) **Ap 105**
Sze, Y. The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**
Szendy, G. L. *(author)* Worterbuch des patentwesens in funf sprachen. Deutsch, Englisch, Franzosisch, Spanisch, Russisch (CB) **D 106**
Szescila, A. J. Techniques for Gravel Packing Abnormally Pressured Unconsolidated Reservoirs (75-Pet-37) (A) **Ja 117**
Szetela, E. J. Deposits from Heated Gas Turbine Fuels (76-GT-9) (A) **Jl 87**
Szewalski, R. A Novel Design of Turbine Blading of Extreme Length (76-DET-93) (A) **D 96**

T

Tabakoff, W. Gas Turbine Blade Heat Transfer with Rough Surfaces (75-WA/HT-107) (A) **Je 117**; Losses in Radial Inflow Turbines (76-FE-9) (A) **Ag 94**; A Numerical Solution for the Heat Transfer Between an Axi-Symmetric Air Jet and a Heated Plate (75-WA/HT-106) (A) **Je 117**
Taber, J. J., Jr. Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**
Tactile-Controlled Robot
Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**
Tadano, M. Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**
Tailor-Making Materials
Tailor-Making Materials for Specific Properties (BTR) **D 52**
Taira, T. Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**
Taitel, Y. A Model for Predicting Flow Regime Transitions in Horizontal and Near Horizontal Gas-Liquid Flow (75-WA/HT-29) (A) **Ap 102**
Takahara, K. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**
Takahashi, T. High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**
Takaishi, S. Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**
Takeda, R. A Design Method on Propeller Current Meters (75-WA/FM-5) (A) **Je 118**
Takeuchi, D. I. Heat Transfer with Film Cooling Within and Downstream of One to Four Rows of Normal Injection Holes (76-GT-83) (A) **Jl 96**
Takeyasu, K. Precision Insertion Control Robot and Its Application (76-DET-50) (A) **N 102**
Takoh, T. An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A) **Ag 95**
Talapatra, D. C. Application of a Finite Element Computer Program for Studying Failures and Affecting Design Modifications in 20-mm Gun Components (76-DET-95) (A) **D 96**
Tall, W. A. Measurement and Prediction of 3-D Viscous Flows in Low-Aspect-Ratio Turbine Nozzles (76-GT-73) (A) **Jl 95**
Tallian, T. E. Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) (A) **Ja 122**; Part II—Experimental (75-Lub-38) (A) **Ja 122**
Tamaki, T. Experimental Evaluation of an Axial-Flow Transonic Compressor (76-GT-34) (A) **Jl 90**
Tamura, T. Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**
Tanaka, T. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**
Tanake, K. Evaluation of Improved Cycles for Marine

Application of An Aircraft Derivative Gas Turbine (76-GT-114) (A) **Ag 91**

Tandy, C. *(author)* The Landscape of Industry (CB) **S 103**

Taney, A. R. The Age of Hybrids (C) **Jl 42**

Tangent Railroad Track

An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**

Tani, T. Effect of Selective Thin Barrier on Radiative Heat Transfer for Solar Collectors (76-HT-2) (A) **O 98**

Tank, S. Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 95**

Tapered Aortas

A Finite Element Large Deformation Analysis of a Tapered Aorta (75-WA/Bio-5) (A) **Mr 99**

Tapered Roller Bearings

Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) (A) **S 96**

Tar Sands

Successful Use of Unconventional Diesel Fuels from Athabasca Tar Sands in RR Diesel Locomotive Engines in Canada (76-DGP-6) (A) **Ag 97**

Taralis, D. N. Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**

Tarasuk, J. D. Heat Transfer from Inflatable Structures (75-WA/HT-97) (A) **Je 116**

Target Plates

Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Tarrant, A. R. Gas Will Last (C) **S 48**

Task Force Management

Management By Task Force: A Manual on the Operation of Interdisciplinary Teams (CB) **Ag 102**

Tatom, J. W. Clean Fuels from Agricultural and Forestry Wastes—The Mobile Pyrolysis Concept (75-WA/HT-47) (A) **My 101**

Tax Regulations

The Government as a Source of Energy Through Tax and Subsidy Policy: A Quantitative Application to Solar Energy (75-WA/Pet-3) (A) **My 95**

Taxi Cabs

Flagging the Taxis of the Future (NR) **Ag 58**

Taylor, G. R. Microbiology Studies in the Space Shuttle (76-ENAs-23) (A) **O 95**

Taylor, R. P. Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**

Taylor, T. E. An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) (A) **My 100**

Teare, J. D. Laser Beam-Atmospheric Aerosol Interactions (75-WA/HT-42) (A) **Ap 104**

Technical Growth

Professional Development—Pulling It Together **Ap 40**

Technical Information

Getting a Word in Edge-Wise (WW) **D 78**

Looking Out for Your Interests (PS) **D 79**

Technical Japanese Texts

Comprehending Technical Japanese (CB) **F 88**

Technical Papers

Technical Papers and Ethics (C) **Mr 45**

Technical Presentations

A Guide for Better Technical Presentations (CB) **Ap 107**

Technological Innovation

Technological Innovation—A Methodology (CB) **Jl 101**

Closing the Gap Between Research and Practice (76-DET-86) (A) **D 95**

UTS: Solving Local Problems **Jl 35**

Technological Transfer

Benjamin Henry Latrobe and Moncure Robinson: The Engineer as Agent of Technological Transfer (CB) **Ap 108**

Technology

Appropriate Technology (CB) **D 106**

D.C. Postscript (WW) **Ag 68**

Ford and Carter—Their Views on Technology **O 20**

Governing Science and Technology (CB) **Ag 103**

Humanities and Technology (EN) **My 69**

The Science and Technology Policy Act of 1976 (WW) **Jl 68**

Social Implications of Technology: An Economic Model Based on Efficiency (75-WA/Aut-2) (A) **Ap 93**

Speak Out for Technology (Ed) **Jl 15**

Syntony and Spark: The Origins of Radio (CB) **O 106**

Technology and Human Needs **N 73**

Technology Assessment

How Do We Decide? **Ag 34**

Social Impacts of Energy Alternatives to be Studied (NR) **Ap 68**

Technology Changes

Up-to-Date with ME (C) **Ja 37**

Technology Development

The Maze of Ingenuity: Ideas and Idealism in the Development of Technology (CB) **Ja 127**

Payload Influences on Technology Development and Utilization of the Space Shuttle Extravehicular Mobility Unit (76-ENAs-62) (A) **N 94**

Technology Diffusion

Technology Diffusion: Federal Programs and Procedures (CB) **Jl 100**

Technology and Human Affairs

Technology and Human Affairs Department Created (EN) **D 74**

Technology Management

Technology Management School at Polytechnic (EN) **Mr 73**

Technology and Society

The Interdisciplinary Approach in the Teaching of Technology-Society Courses (75-WA/TS-1) (A) **Mr 94**

A Methodology of Technology Analysis with Application to Energy Assessment (75-WA/TS-8) (A) **Mr 94**

Nuclear Power Plant Construction and the Public Safety (75-WA/TS-5) (A) **Mr 94**

Preliminary Technology Assessment: Ocean Thermal Energy Conversion Systems (75-WA/TS-3) (A) **Mr 95**

Results Produced by a Technology Assessment of OCS Oil and Gas Resources (75-WA/TS-6) (A) **Mr 94**

Review of the Office of Technology Assessment Activities (75-WA/TS-4) (A) **Mr 94**

Technology Assessment and Social Choice: A Policy-Oriented Course (75-WA/TS-2) (A) **Mr 94**

The Worcester Water Quality Study: A Joint Venture in Community Service (75-WA/TS-7) (A) **Mr 95**

Technology Transfer

Advanced Composites: Design Technology Transfer from Aerospace to Machinery (76-DET-80) (A) **D 94**

Application of Finite Element Technique to the Design Technology Transfer (76-DET-74) (A) **D 94**

A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **D 94**

Effective Role of Trade Magazines in Design Technology Transfer (76-DET-106) (A) **D 97**

Facets of Technology Transfer (BTR) **Ap 59**

Federal Technology Transfer: Results of a Survey of Formal Programs (75-WA/Aero-4) (A) **My 98**

A Note on the Transfer of Technology Between Universities and the Fluid Power Industry in the U.K. (76-DET-85) (A) **D 95**

Public Sector Technology Transfer—A Congressional Perspective (75-WA/Aero-1) (A) **My 98**

Public Sector Technology Transfer—The Policy Connection (75-WA/Aero-3) (A) **My 98**

Questions the Designer Must Face **D 82**

Technology Transfer from Space to Earth—The NASA Firefighter's Breathing System (76-ENAs-54) (A) **N 93**

Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**

The Transfer of Intermediate Technology: A Challenge to the Multinational Company (76-DET-81) (A) **D 94**

Technology-Based Companies

New Vs. Old Businesses (WW) **Ap 76**

Telephone Voices

Voice Cues Indicate Physical Features (BTR) **Jl 48**

Telephones

Pause-and-Pulse Conversation (BTR) **N 48**

Temperature Differences

Film Cooling of Gas Turbine Blades: A Study of the Effect of Large Temperature Differences on Film Cooling Effectiveness (76-GT-2) (A) **Jl 86**

Temperature Distribution

Heat Transfer and Temperature Distribution in Liquid-Liquid Direct Contact Parallel Flow of Immiscible Liquids (76-HT-25) (A) **O 101**

Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**

Temperature Fields

Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**

Temperature Measurement

Experimental Methods for Measuring Temperatures in Airways Under Deep Diving Environmental Conditions (75-WA/OcE-7) (A) **Ap 91**

Infrared Temperature Measurement Applied to Engineering Design Analysis (75-WA/TM-3) (A) **My 96**

Pyrometer Temperature Measurements in the Presence of Reflected Radiation (76-HT-74) (A) **N 90**

Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) (A) **My 96**

Surface Temperature Measurement Using Electroplated Thermocouples (75-WA/TM-2) (A) **My 96**

Temperature Measurement Errors

Error in Temperature Measurements Due to Conduction Along the Sensors (75-WA/HT-92) (A) **My 106**

Temperature Profiles

Predictions of Temperature Profiles in Fluid Bed Boilers (76-HT-66) (A) **N 89**

Temperature Transients

Models for the Representation of Turbomachine Blades During Temperature Transients (76-GT-23) (A) **Jl 89**

Temperature Variations

Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**

ten Napel, W. E. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) (A) **Ja 121**

Tendord, Z. A. Dynamics of Initially Stressed Plates (76-APM-29) (A) **S 101**

Tenoso, H. J. Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**

Tensile Composite Rods

Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) (A) **Mr 101**

Tensile Properties

Assessment of Tensile and Creep Data for Types 304 and 316 Stainless Steel (76-PVP-31) (A) **D 101**

Elevated Temperature Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**

Tensile Tests

The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) (A) **Mr 104**

Tension

Stresses Around a Rib-Reinforced Elliptic Hole in a Circular Cylindrical Shell Under Tension (76-PVP-13) (A) **D 99**

Termuehlen, H. Turbine Rotor Vibrations Excited by Steam Forces (Steam Whirl) (75-WA/Pwr-11) (A) **F 85**

Terry, J. P. Mechanical and Chemical Operating Problems of Gas Cleaning Systems (75-WA/APC-11) (A) **Je 114**

Tesar, D. Synthesis of Spring Parameters to Balance General Forcing Functions in Planar Mechanisms (76-DET-45) (A) **N 101**; Synthesis of Spring Parameters to Satisfy Specified Energy Levels in Planar Mechanisms (76-DET-44) (A) **N 101**

Test Reading Estimations

Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) (A) **My 97**

Tewari, S. N. Heat Treating of a Lamellar Eutectic Alloy ($\gamma/\gamma' + \delta$) (76-GT-103) (A) **Ag 90**

Textile Engineering

Balloon Collapse in Ring Spinning (75-Tex-2) (A) **Ja 124**

Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) (A) **Ja 124**

The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**

The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**

Electric Rates in Today's Economy (75-Tex-9) (A) **Ja 125**

Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) (A) **Ja 125**

Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) (A) **Ja 125**

Spinning Frame Noise Sources (75-Tex-7) (A) **Ja 125**

The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) (A) **Ja 124**

Textile Engineering Conference

Effects of Spindle Centering on Ring-Spinning Tension (76-Tex-2) (A) **N 95**

The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**
Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**
Particle Measurements for Textile Airborne Process Waste Control (76-Tex-9) (A) **N 96**
Particle Size Analysis of Cotton Dust Using Scanning Electron Microscopy (76-Tex-3) (A) **N 95**
Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**
Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**
Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**
Some Specific Problems and Findings in Open-End Spinning (76-Tex-8) (A) **N 96**
A Unique Cotton Silver Drafting System (76-Tex-4) (A) **N 95**

Textile Industry
Digital Control of Finished Yield for the Textile Industry (75-WA/Aut-15) (A) **Ap 94**
Fly-Shuttle Loom Noise Source Identification (76-DE-39) (A) **S 92**
Samuel Slater Meets Moses Brown and a Textile Empire is Founded **N 16**

Textiles Handbook
The Standard Handbook of Textiles (CB) **F 88**

Teyssandier, R. G. Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles (75-WA/FE-19) (A) **Je 110**

Thatree, N. Design and Experimental Evaluation of a V-groove Solar Collector (76-HT-53) (A) **O 104**

Thau, S. A. Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) (A) **O 105**

Thawing
The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
A Numerical Study of Freezing and Thawing of Bulk Materials During Rail Transportation (75-WA/HT-87) (A) **My 106**

Theocaris, P. S. Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**

Theoretical Models
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) (A) **My 96**

Thermal Analysis
Preliminary Thermal Analysis of Air-Storage Gas Turbine System (75-Pwr-20) (A) **Ja 112**
Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) (A) **My 104**

Thermal Behavior
SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**

Thermal Boundary Conditions
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**

Thermal Conductivity Probe
A Miniature Thermal Conductivity Probe for Foods (76-HT-60) (A) **N 88**

Thermal Control
A Fusible Heat Sink Concept for Extravehicular Activity (EVA) Thermal Control (76-ENAs-64) (A) **N 94**
Thermal Control of the International Ultraviolet Explorer (76-ENAs-38) (A) **O 97**
Thermal Control Systems for Low Temperature Shuttle Payloads (76-ENAs-65) (A) **N 94**

Thermal Coupling
Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Thermal Design
Thermal Design and Test of the CTS Deployable Solar Array (76-ENAs-26) (A) **O 92**

Thermal Diffusivity
Effective Thermal Diffusivity for a Multi-Material Composite Laminate (75-WA/HT-90) (A) **My 106**

Thermal Effects
A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) (A) **Ja 122**
Three-Dimensional Thermal Effects in PWR Fuel Rods (75-WA/HT-78 (A) **My 105**

Thermal Energy
Power, Fresh Water, and Food from the Sea **S 27**

Thermal Energy Storage
A Method of Simulating the Performances of a Pebble Bed Thermal Energy Storage and Recovery System (76-HT-73) (A) **N 90**

Thermal Expansion
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Thermal Gradients
Creep Analysis of Metallic Structures in the Presence of Thermal Gradients Using Newer Constitutive Relations (76-PVP-30) (A) **D 100**

Thermal Insulations
Radiative Transfer Through Thin-Walled Glass Honeycomb (76-HT-48) (A) **N 88**

Thermal Plumes
The Characteristics of Thermal Plumes (75-WA/HT-64) (A) **My 103**

Thermal Radiative Properties
Thermal Radiative Properties of the Noble Metals of Cryogenic Temperatures (76-HT-6) (A) **O 98**

Thermal Ratcheting
Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) (A) **Je 111**
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**

Thermal Shock Testing
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Thermal Shock Treatment
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**

Thermal Stress Analysis
Thermal Stress Analysis of Thin, Spherical Shells (76-DET-104) (A) **D 97**

Thermal Stresses
Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**
Procedure for the Determination of Thermal Stresses in 3-Shell Junctions Common to Pressure Vessel Construction (76-PVP-53) (A) **D 103**
Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**
Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**

Thermal Transients
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) (A) **Je 111**
Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients (75-WA/PVP-3) (A) **Ap 97**

Thermal Vacuum Testing
Development Testing of a Self-Contained Heat Rejection Module (76-ENAs-33) (A) **O 96**

Thermal-Electric Power Plants
Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**

Thermal/Hydraulic Design
Thermal/Hydraulic Design Considerations for Clinch River Breeder Reactor Plant Intermediate Heat Exchangers (75-WA/HT-101) (A) **My 107**

Thermally Stratified Fluids
Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**

Thermochemical Sublimation
Graphite Sublimation Under Low and High Convective Mass Transfer Environments (76-ENAs-68) (A) **N 95**

Thermocouples
Intrinsic Thermocouple Measurement Errors (76-HT-65) (A) **N 89**
The Pulsed Thermocouple for Gas Turbine Application (76-GT-1) (A) **JI 86**

Thermodynamic Cycles
Heat Exchangers for High Temperature Thermodynamic Cycles (75-WA/HT-102) (A) **Je 116**

Thermodynamic Data
Handbook of Thermodynamic Tables and Charts (CB) **Ag 103**

Thermoelastic Instability
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Thermoelasticity
Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) (A) **S 98**

Thermography
Theoretical Basis for Use of Skin Temperature as a Plethysmographic Indicator (75-WA/Bio-6) (A) **Mr 100**

Thermophysical Properties
Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**

Thermoplastic Insulation
Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**

Thermosetting Materials
Residual Thermal Stresses in a Solid Sphere Cast From a Thermosetting Material (75-WA/APM-8) (A) **Je 119**

Thermoviscoelastic Medium
Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) (A) **S 99**

Thiaville, J.-M. Design of an Annular Channel for Testing Highly Loaded Compressor Blades: Comparison Between Theory and Experiments (76-GT-79) (A) **JI 96**

Thickness Measurements
Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**

Thickwalled Conduits
Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**

Thielsch, H. Elections to Fellow Grade **Ag 88**

Thin-Walled Tube Expansion
Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE 9) (A) **Ag 100**

Thomas, K. M. Development and Design of Directionally Solidfied Eutectic Airfoils for Advanced Gas Turbine Engines (76-GT-32) (A) **JI 90**

Thomas, L. C. Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**

Thomas, N. T. Electrolytic Urine Pretreatment (76-ENAs-19) (A) **O 95**

Thomas, W. C. Surface Temperature Measurement Using Electroplated Thermocouples (75-WA/TM-2) (A) **My 96**

Thompson, B. S. A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) (A) **N 101**

Thompson, J. C. The Interface Boundary Conditions for Belted Flanged Connections (76-PVP-4) (A) **D 98**

Thomsen, E. G. Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**

Thomsen, H. H. Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) (A) **Mr 101**

Thorley, A. R. D. Pressure Surge Propagation in Thickwalled Conduits of Rectangular Cross Section (75-WA/FE-15) (A) **Je 110**

Thornburgh, J. D. Nuclear Reactions (C) **Ap 47**

Thornley, P. D. Development of an On-Board Oxygen Generating System (76-ENAs-9) (A) **O 93**

Thorstensen, P. T. Besieged by Torrs (C) **Ja 37**

Three-Dimensional Analysis
Three-Dimensional Analysis of an Elastic Plate-Cylinder Intersection by the Boundary-Point-Least-Squares Technique (76-PVP-34) (A) **D 101**

Three-Dimensional Boundary Layers
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**

Three-Dimensional Effects
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**

Three-Dimensional Flow
Numerical Study of Some Three-Dimensional Laminar Free-Convective Flows (76-HT-34) (A) **O 101**
Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **JI 92**

Three-Dimensional Flow Field
Measurement of the Three-Dimensional Flow Field Behind an Axial Compressor Stage (76-GT-18) (A) **JI 88**
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow

Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**

Three-Dimensional Mechanisms
A Dependable Method for Solving Matrix Loop Equations for the General Three-Dimensional Mechanism (76-DET-53) (A) **N 102**

Through Cracks
On Through Cracks at Interference Fit Fasteners (76-PVP-5) (A) **D 98**

Through Flow
Calculation of the Quasi Three-Dimensional Flow in a Turbomachine Blade Row (76-GT-56) (A) **Jl 93**
A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**

Throsrud, E. C. Net Section Rings for Gas Turbines by Isothermal Rolling (76-GT-94) (A) **Jl 97**

Thruelsen, R. *(author)* The Grumman Story (CB) **S 103**

Thrust Balancing
Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) (A) **D 97**

Thrust Bearings
Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**
An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**
The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) (A) **S 96**

Thrust Reversals
Assembly and Test of a Direct Reversing Marine Gas Turbine (76-GT-27) (A) **Jl 90**

Thrust-Loaded Ball Bearings
Prediction of Ball Motion in High Speed Thrust-Loaded Ball Bearings (75-Lub-1) (A) **Ja 118**

Tidal Power
S&W Studies the Tides (ES) **Je 19**

Tiefenbacher, E. Problems of the Heat Exchanger for Vehicular Gas Turbines (76-GT-105) (A) **Ag 90**

Tien, C. L. A New Differential Formulation of Radiative Transfer and Its Application to the One-Dimensional Problem (76-HT-49) (A) **O 103**

Tillman, E. S. Natural Convection Heat Transfer from Horizontal Tube Bundles (76-HT-35) (A) **O 102**

Tilt
Effect of Tilt and Horizontal Aspect Ratio on Natural Convection in Rectangular-Honeycomb Solar Collectors (76-HT-18) (A) **O 99**

Tilting Pad Bearings
An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) (A) **Ja 122**

Time Study
Motion and Time Study (CB) **D 106**

Timm, G. W. Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**

Tire Concepts
An Act Designed to Run Flat (BTR) **Ap 52**

Tires
Four-Tire Run-Flat System (BTR) **Je 63**

Tirosh, J. Analysis and Design Disposal Energy Absorber by Plastic Indentation (76-DET-105) (A) **D 97**. Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) (A) **S 101**

Titanium-Beryllium Alloys
New Titanium-Beryllium Alloys (BTR) **F 48**

Tiwari, S. N. Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**

Tobbe, H. Evaluation of Fuel Rod Cladding Strength in Steady and Non-Steady Reactor Operation (75-WA/HT-74) (A) **My 104**

Todd, D. M. Beaver Plant-Conversion to Combined Cycle (75-Pwr-29) (A) **Ja 114**

Todreas, N. E. Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**

Toepel, F. P. Development of a Roller Nut Control Rod Drive Mechanism for the Fast Flux Test Facility (75-WA/NE-2) (A) **F 78**

Tomany, J. P. *(author)* Air Pollution: The Emissions, the Regulations and the Controls (CB) **F 89**

Tomizuka, M. On the Design of Adaptive Servosystems (75-WA/Aut-14) (A) **Ap 94**

Toney, S. Some Adverse Effects of Stress Corrosion in Steam Turbines (76-IPC-Pwr-8) (A) **S 93**

Tonnesen, J. Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) (A) **Ja 123**

Tonometer Loading
Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**

Tool Design
Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) (A) **S 99**

Tool Life
An Analysis of Tool Life Based on Flank-Face Wear, Part 1: Theory (75-WA/Prod-28) (A) **Mr 103**. Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) (A) **Mr 104**

Tool Wear
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) (A) **Mr 101**

Tool-Life Models
Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**

Tools
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) (A) **Mr 102**
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process, Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) (A) **Mr 101**

Toothed Coupling
Minimizing Assembly Imbalance in Turbomachine Rotors Made with Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **Jl 93**

Torda, T. P. E Rates A$^+$ (C) **Mr 43**
Minimizing Asssembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **Jl 93**

Torispherical Vessel Heads
Instability Analysis of Torispherical Pressure Vessel Heads with Triangular Thin-Shell Finite Elements (76-PVP-33) (A) **D 100**
Nonsymmetric Buckling of Internally Pressurized Ellipsoidal and Torispherical Elastic-Plastic Pressure Vessel Heads (76-PVP-25) (A) **D 100**
Stress and Buckling of Internally Pressurized, Elastic-Plastic Torispherical Vessel Heads—Comparisons of Test and Theory (76-PVP-23) (A) **D 100**

Tornadoes
Stronger Than a Tornado (ES) **My 17**
Of Tornadoes and New Energy Sources (NR) **O 66**

Toroidal Seals
On Reciprocating Toroidal Seals (75-WA/DE-20) (A) **Mr 106**

Torpey, P. J. Elections to Fellow Grade **My 92**

Torquewhirl
Torquewhirl—A Theory to Explain Nonsynchronous Whirling Failures of Rotors with High Load Torque (76-DE-29) (A) **S 91**

Torrance, K. E. Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**

Torsional Creep Fatigue
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**

Torsional Loading
The Inelastic Deformation of Pressurized Stainless Steel Tubes Under Dynamic Bending and Torsional Loading (76-PVP-24) (A) **D 100**

Torsionally Flexible Wheelsets
Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**

Toscano, W. M. Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) (A) **O 98**

Touchton, G. L. A Correlation of Nitrogen Oxides Emissions with Gas Turbine Operating Parameters (76-GT-14) (A) **Jl 88**

Tower Cooling Systems
Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) (A) **F 84**

Townsend, D. P. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**. A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**

Townsend, M. A. A Powered Bipedal Walking Prosthesis (75-WA/Bio-14) (A) **Mr 100**. A Practical Stability Analysis of a Class of Bipedal Locomotion Prostheses (75-WA/Bio-13) (A) **Mr 100**

Toxic Substances
How to Dispose of Toxic Substances and Industrial Wastes (CB) **D 107**

Toxic Wastes
Improved Process to Treat Toxic Wastes (NB) **Je 79**

Trace Contaminants
A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**

Trace Metal Emissions
Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**

Trace-Gas Mixtures
Monitoring Complex Trace-Gas Mixtures by Long-Path Laser Absorption Spectrometry (76-ENAs-8) (A) **O 93**

Trachman, E. G. A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) (A) **S 96**

Track Surfaces
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) (A) **S 96**

Tracked Air Cushion Vehicles
Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**

Track-Recording Solids
Nuclear Tracks in Solids: Principles and Applications (CB) **F 89**

Track/Train Dynamics
Track/Train Dynamics Research and Progress: Phase One (75-WA/RT-9) (A) **F 77**

Traction
Prediction of Traction in Sliding EHD Contacts (75-Lub-7) (A) **Ja 119**
Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) (A) **S 98**

Tractor-Trailer Rigs
A Shapelier Truck (ES) **Je 18**

Trade Magazines
Effective Role of Trade Magazines in Design Technology Transfer (76-DET-106) (A) **D 97**

Trailing Edge
Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **Jl 98**

Trailing Edge Flow
Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **Jl 90**

Training Programs
Oil Spill Training Program (EN) **F 60**

Transducers
The Use of Plastic Cold Flow in the Development of an Externally Connected Transducer for Recording Pressure-Time Histories of Diesel Fuel Injection Phenomena and Its Application in Fault Diagnosis (76-DGP-3) (A) **Ag 96**

Transient Analysis
A Nonlinear Lumped Parameter Model for Transient Analysis of a Recirculated Steam Generator (75-WA/HT-13) (A) **Ap 100**

Transient Cavitation
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) (A) **F 85**

Transient Colorimeters
Optimum Sensor Location in Transient Calorimeters (76-HT-63) (A) **N 89**

Transient Flow
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**

Transient Heat Conduction
Accuracy, Stability, and Oscillation Characteristics of Transient Two-Dimensional Heat Conduction (75-WA/HT-85) (A) **My 106**
Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**
Numerical Solution of One-Dimensional Inverse Transient Heat Conduction by Finite Difference Method (75-WA/HT-81) (A) **My 105**
Quasi-Coupling—An Approximate Solution Method for In-

terface Conditions in Two Region Transient Heat Conduction Problems (75-WA/HT-93) (A) **My 107**
Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Transient Mass Flow
Uncoupling of Heat Transfer and Gas Dynamic Contributions to Transient Mass Flow Rate During Vessel Discharge (76-FE-16) (A) **Ag 95**

Transient Monitoring System
To Check Transient Conditions (ES) **Je 18**

Transient Phenomena
An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A). **Ag 95**

Transient Response
The Transient Response of Noncircular Fluid Transmission Lines (75-WA/Flcs-10) (A) **Je 115**
Transient Response of Terminated Pneumatic Transmission Lines by Frequency Response Conversion (75-WA/Flcs-4) (A) **Je 114**

Transient Thermal Singularities
Stress Intensity Factors in Edge-Cracked Plates Subjected to Transient Thermal Singularities (76-PVP-38) (A) **D 101**

Transient Voiding
Local Film Thickness During Transient Voiding of a Liquid Filled Channel (75-WA/HT-27) (A) **Ap 102**

Translational Acceleration
The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**

Transmission Angles
Design of Four-Bar Function Generators With Mini-Max Transmission Angle (76-DET-8) (A) **N 97**

Transmission Cables
Power Transmission via the Superconducting Cable **Ja 20**

Transmission & Distribution Plants
T&D Lines: Up or Under? (ES) **N 15**

Transmission Systems
Study of Light Weight Turbine Transmission Systems (76-GT-121) (A) **Ag 92**

Transonic Blades
Aerodynamics and Heat Transfer at the Trailing Edge of Transonic Blades (76-GT-95) (A) **Jl 98**
A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **Jl 94**

Transonic Cascade Flows
A Non-Orthogonal Numerical Method for Solving Transonic Cascade Flows (76-GT-63) (A) **Jl 94**

Transonic Compressors
Experimental Evaluation of Axial-Flow Transonic Compressor (76-GT-34) (A) **Jl 90**

Transonic Flow Compressors
Effects of Casing Treatment on a Small, Transonic Axial-Flow Compressor (75-WA/GT-5) (A) **F 81**

Transonic Turbine Blades
Model Tests for the Detailed Investigation of the Trailing Edge Flow in Convergent Transonic Turbine Cascades (76-GT-30) (A) **Jl 90**

Transport Modes
New Transport Modes Exhibited (NR) **F 55**

Transport Phenomena
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**

Transportation
A Review of Short Haul Passenger Transportation (CB) **D 107**
Transportation: Where Do We Go From Here? (NR) **S 64**

Transportation Revolution
Without Wheels: Alternatives to the Private Car (CB) **Ja 127**

Transportation Systems
A Human Model for Measuring Ride Quality **Jl 30**

Transverse Surface Motion
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) (A) **Ag 93**

Trapping
Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**

Trash Contamination
Comparative Analysis of Trash Contamination in Cotton by Optical Scanning (76-Tex-1) (A) **N 95**

Trash Pulverization
Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**

Trash Removal
The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**

Trasi, S. R. On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) (A) **S 99**

Tremor, J. W. Biomedical Experiments Scientific Satellite (BESS) (76-ENAs-57) (A) **N 93**

Trevillion, W. L. Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**

Treyti, W. J. A Mechanical Device for Detecting and Functioning in a Planetary-Type Acceleration Field (76-DET-72) (A) **D 93**

Trezek, G. J. Performance of a Spray Pond for Nuclear Power Plant Ultimate Heat Sink (75-WA/HT-41) (A) **My 100**

Triangle Geometry
Synthesis of a Six-Link Spatial Mechanism via Screw Triangle Geometry, Successive Screw Displacements, and Pair Geometry Constraints (76-DET-46) (A) **N 102**

Tribus, M. Along the Corridors of Power—Where Are the Engineers? **Ap 24**

Trice, J. B. Solar Energy Applications to Process Hot Water Demands in Textile Dyeing and Finishing (76-Tex-11) (A) **N 96**

Troha, W. Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **Jl 89**

Trompette, P. Prediction of Modal Damping of Jet Engine Stator Vanes Using Finite Element Techniques (76-GT-60) (A) **Jl 94**

Troposphere
Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**

Truck Behavior
Computer Oriented Data Collection and Reduction System for Analysis of Railroad Freight Car Truck Behavior (75-WA/RT-4) (A) **F 76**

Truck Hunting
Proposed Solutions to the Freight Car Truck Problems of Flange Wear and Truck Hunting (75-WA/RT-8) (A) **F 77**

Truck Mounted Cranes
Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) (A) **S 92**

Trucks, H. Thermal Control Systems for Low Temperature Shuttle Payloads (76-ENAs-65) (A) **N 94**

True, M. E. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**

Truncated Cones
The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) (A) **S 98**

Trzyna, T. C. *(editor)* World Directory of Environmental Organizations (CB) **Je 123**

Tsai, C. L. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) (A) **Ap 104**

Tsai, L.-w. Instantaneous Kinematics of a Special Two-Parameter Motion (76-DET-4) (A) **N 97**

Tsai, S. C. A Simplified Method for Logic Design of Pneumatic Sequential Control Circuits (75-WA/Aut-22) (A) **Ap 95**

Tsang, S. An All-Pneumatic Artificial Ventricle Driving System (75-WA/Flcs-2) (A) **Je 114**

Tse, Y. H. Parametric Studies on a Railroad Freight Car Mathematical Model (75-WA/RT-11) (A) **F 78**

Tsokos, C. P. Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) (A) **Ap 93**

Tsokos, J. O. Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) (A) **Ap 93**

Tsou, F. K. Prediction of Film-Cooling Effectiveness in an Unsteady Turbulent Boundary Layer (76-HT-28) (A) **O 101**

Tsuei, Y. G. Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) (A) **S 99**

Tube Bending Machines
Tube Bending Machine (IF) **Ap 64**

Tube Bundles
Natural Convection Heat Transfer from Horizontal Tube Bundles (76-HT-35) (A) **O 102**

Tube Expansion
Analytical Investigation of Thin-Walled Tube Expansion by the Inversion Process (76-DE-9) (A) **Ag 100**

Tube Flow
Turbulent Combined Forced and Free Convection Heat Transfer in Vertical Tube Flow of Supercritical Fluids (75-WA/HT-59) (A) **My 102**

Tube Rotational Restraint
Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) (A) **Ag 100**

Tube-in-Strip Collectors
Energy Market Looking Up (BTR) **Ag 43**

Tubes
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) (A) **Ap 105**
On the Creep Rupture of a Tube and a Sphere (75-WA/APM-4) (A) **Je 119**
Growth Characteristics of Part-Through Cracks in Thick-Walled Plates and Tubes (76-PVP-39) (A) **D 101**
Heat Transfer Between a Finned Tube and Air in the Presence of a Corona Discharge (75-WA/HT-18) (A) **Ap 101**
Heat Transfer to Tubes in Fluidized Beds (76-HT-75) (A) **N 90**
Investigations into Burnout in Uniformly Heated Tubes (75-WA/HT-22) (A) **Ap 102**
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**
Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**
On Two-Phase Flow Induced Stability Analysis of a Ruptured Steam Generator Tube (76-PVP-18) (A) **D 99**

Tubesheet Design
Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) (A) **Ag 100**

Tubesheets
Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**

Tube-to-Tubesheet Welds
Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**

Tubing Joints
An Investigation of Coupled Tubing Joints for Sour Service (75-Pet-34) (A) **Ja 116**

Tubular Exchanger Manufacturers Association
TEMA and the Nuclear Power Industry (75-Pwr-17) (A) **Ja 112**

Tubular Goods
Automatic Nondestructive Testing of Oil Field Tubular Goods (75-Pet-42) (A) **Ja 117**
Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) (A) **Ja 117**

Tubular Ultrafiltration Systems
Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**

Tucker, T. R. Mechanical Response and Thermal Coupling of Metallic Targets to High-Intensity 1.06 Laser Radiation (75-WA/HT-40) (A) **My 101**

Tuna Fishing
Tuna-Porpoise Controversy (BTR) **D 52**

Turbine Blade Erosion
The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **Jl 95**

Turbine Blade Shroud
Modeling of Turbine Blade Tip Contact (75-WA/GT-14) (A) **F 82**

Turbine Blades
Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**
Secondary Loss Measurements in a Cascade of Turbine Blades with Meridional Wall Profiling (75-WA/GT-13) (A) **F 82**

Turbine Blading
A Novel Design of Turbine Blading of Extreme Length (76-DET-93) (A) **D 96**

Turbine Cascades
Analytical Formulation of Three-Dimensional Laminar Viscous Flow Through Turbine Cascades Using Surface-Oriented Coordinates (76-FE-22) (A) **Ag 95**
Three-Dimensional Flow Within a Turbine Cascade Passage (76-GT-50) (A) **Jl 92**

Turbine Disk Alloys
Powder Metallurgy Processing of High Strength Turbine Disk Alloys (76-GT-96) (A) **Jl 98**

Turbine Engine Fan Blades
Composite Inlays Increase Flutter Resistance of Turbine Engine Fan Blades (76-GT-29) (A) **JI 89**
Turbine Nozzles
Measurement and Prediction of 3-D Viscous Flows in Low-Aspect-Ratio Turbine Nozzles (76-GT-73) (A) **JI 95**
Turbine Sulfidation
Programs to Evaluate Gas Turbine Maintenance and Operating Techniques (76-GT-124) (A) **Ag 92**
Turbine Test Facilities
Largest Turbine Test Lab (BTR) **S 54**
Turbine Testing
Lowering Cost of Testing Turbines (BTR) **My 48**
Turbine Vanes
Experimental Verification of Film-Cooling Concepts on a Turbine Vane (75-WA/GT-21) (A) **F 83**
Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **JI 91**
Turbines
The Redundant Omega Clutch—A Marine Propulsion Clutch for Turbines (76-GT-65) (A) **JI 94**
Turbines for Inga II (BTR) **My 61**
Turbodyne/BBC Turbines
Modern Gas Turbines for Low Btu Gas Fuel Operation (76-GT-117) (A) **Ag 91**
Turbofan Engines
CFM56 Turbofan Engines—General Electric/SNECMA Cooperative Engineering Development Program (76-GT-78) (A) **JI 95**
A Multi-Variable Control for a Turbofan Engine Operating at Sea Level Static (76-GT-71) (A) **JI 95**
Turbofans
An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **JI 90**
Turbojet Engines
Measurement of Exhaust Emissions from Two J-58 Engines at Simulated Supersonic Cruise Flight Conditions (76-GT-8) (A) **JI 87**
Turbomachine Blades
Models for the Representation of Turbomachine Blades During Temperature Transients (76-GT-23) (A) **JI 89**
The Response of Turbomachine Blades to Low Frequency Inlet Distortions (76-GT-19) (A) **JI 88**
Turbomachine Rotors
Minimizing Assembly Imbalance in Turbomachine Rotors Made With Toothed Coupling: Locating Component Mass Centers (76-GT-51) (A) **JI 93**
Turbomachinery
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) (A) **Je 108**
A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **JI 94**
Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) (A) **F 83**
A Nearly Three-Dimensional Intrablade Computing System for Turbomachinery—Part I: General Description (76-FE-19) (A) **Ag 96**. Part II: System Details and Additional Examples (76-FE-20) (A) **Ag 96**
Quasi-Three-Dimensional Numerical Solution of Flow in Turbomachines (76-FE-23) (A) **Ag 96**
Three-Dimensional Potential Flow and Effects of Blade Dihedral in Axial Flow Propeller Pumps (75-FE-24) (A) **S 95**
Turbomachinery Flow
A New Approach to the Experimental Study of Turbomachinery Flow Phenomena (76-GT-47) (A) **JI 92**
Turbomachines
Calculation of the Quasi Three-Dimensional Flow in a Turbomachine Blade Row (76-GT-56) (A) **JI 93**
Definition and Application of Means for Predicting Shear Turbulent Flows in Turbomachines (76-GT-67) (A) **JI 94**
A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**
Performance and Flow Regime of Annular Diffuser with Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) (A) **Je 108**
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) (A) **Ag 95**
Turbulence
Control of Free Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) (A) **Ag 93**
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**
Turbulence Amplifiers
Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) (A) **Je 115**
Turbulence Intensities
The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**
Fluid Mixing with Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) (A) **Je 108**
Turbulence Models
Application of a K-ε Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**
Turbulent Boundary Layers
Prediction of Film-Cooling Effectiveness in an Unsteady Turbulent Boundary Layer (76-HT-28) (A) **O 101**
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) (A) **Ag 93**
Transport Phenomena in Near-Wall Region of Turbulent Boundary Layer Around a Rotating Cylinder (75-WA/HT-58) (A) **My 102**
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) (A) **Ag 94**
Turbulent Buoyant Jets
A Numerical Model for a Turbulent Buoyant Jet into a Co-Flowing, Shallow, Open Channel (75-WA/HT-65) (A) **My 103**
Turbulent Channel Flow
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) (A) **S 99**
Turbulent Flow
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (76-FE-26) (A) **S 95**
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) (A) **My 102**
Nonuniform Circumferential Heat Flux Experiments in a Circular Tube (75-WA/HT-52) (A) **My 101**
The Numerical Prediction of the Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-38) (A) **O 102**
Prediction of Diffuser Core Flow Fluctuations Due to Oscillating Turbulent Flow (76-GT-76) (A) **JI 95**
Turbulent Friction
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) (A) **Je 109**
Turbulent Heat Transfer
Turbulent Heat Transfer Studies in Annulus with Inner Cylinder Rotation (75-WA/HT-55) (A) **My 102**
Turbulent Jets
Prediction of the Trajectory of a Turbulent Jet Injected into a Crossflowing Stream (76-FE-8) (A) **Ag 94**
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) (A) **Je 108**
Turbulent Prandtl Numbers
Turbulent Prandtl Numbers for Fully Developed Rotating Annular Axial Flow of Air (76-HT-36) (A) **O 102**
Turbulent Transport
Effect of Molecular Gas Radiation on a Planar, Two-Dimensional, Turbulent-Jet-Diffusion Flame (76-HT-54) (A) **O 103**
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (75-WA/HT-56) (A) **My 102**
Turbulent Velocity
Flow Coefficient Variation for Concentric Orifices from an Analysis of Turbulent Velocity Profiles (75-WA/FE-19) (A) **Je 110**
Turner, L. D. OWS Refrigeration System Computer Model (75-WA/HT-10) (A) **Ap 100**. Spacelab Environmental Control System (76-ENAs-58) (A) **N 93**
Turner, M. R. Oil on Troubled Waters (C) **My 41**
Turnipseed, H. S. The Effect of Electrode Manipulation on Deposit Notch Toughness (75-WA/PVP-18) (A) **Ap 98**
Turteltaub, M. J. Balloon Collapse in Ring Spinning (75-Tex-2) (A) **Ja 124**
Tutt, Charles L., Jr. ASME Congressional Fellow Program (Ed) **Ap 21**. ASME's Economic Future Is In Your Hands (Ed) **F 13**: Cooperation in Engineering **Ja 12**: A New Look at Professional Development (Ed) **Mr 17**: RAC—Getting to the Grass Roots of ASME (Ed) **My 15**: What Does An ASME President Do? (Ed) **Je 17**: The World Measurement Language (Ed) **Ja 9**
Twist Drills
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) (A) **Mr 102**
Two-Bar Assemblies
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) (A) **Je 111**
Two-Die Swaging
Metal Flow in Two-Die Swaging (75-WA/Prod-23) (A) **Ap 104**
Two-Parameter Motion
Instantaneous Kinematics of a Special Two-Parameter Motion (76-DET-4) (A) **N 97**
Two-Phase Flow
Characteristics and Stability Analyses of Transient One-Dimensional Two-Phase Flow Equations and Their Finite Difference Approximations (75-WA/HT-23) (A) **Ap 102**
An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**
Long-Wave Disturbances in Two-Phase Wavy Flow (75-WA/HT-28) (A) **Ap 102**
Measured Characteristics of Adiabatic and Condensing Single-Component Two-Phase Flow of Refrigerant in a 0.377-In. Diameter Horizontal Tube (75-WA/HT-24) (A) **Ap 102**
Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**
Two-Ply Filament Yarns
On the Extension of Elastic Two-Ply Filament Yarns (75-WA/APM-15) (A) **Je 120**
Tylee, J. L. Heave Mode Dynamics of a Tracked Air Cushion Vehicle With Semiactive Airbag Secondary Suspension (75-WA/Aut-3) (A) **Ap 93**
Tyson, T. J. The Control of Pollutant Emissions from Package Boilers (75-WA/FU-4) (A) **My 94**

U

Uhl, W. K. High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
Ulke, A. The Effects of Secondary Flows on Turbine Blade Erosion (76-GT-74) (A) **JI 95**
Ultrafiltration Systems
Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**
Ultrasonic Flowmeters
The Pipeline's Leaking! (ES) **Ja 10**
Ultrasonic Testing
Ultrasonic Testing in the Petroleum Industry—Thickness Measuring and Defect Detection (75-Pet-45) (A) **Ja 117**
Ultraviolet Light Curing
UV Light Cure (BTR) **N 53**
Ultraviolet Purification
Ultraviolet Purification System (BTR) **Ag 51**
Umek, A. On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) (A) **S 101**
Unbalanced Turbines
Determination and Probabilistic Foundation Forces Resulting from an Unbalanced Turbine (76-GT-120) (A) **Ag 92**
Unconditional Stability
On the Unconditional Stability of Implicit Algorithm for Nonlinear Structural Dynamics (75-WA/APM-14) (A) **Je 120**
Underground Mining Technology
Underground Mining Technologies Compared (BTR) **D 54**
Underground Transmission Cables
Power Transmission via the Superconducting Cable **Ja 20**
Underground Transmission Systems
Electricity Is Going Underground (ES) **Je 18**

Underground Water Development
LNG Development Project (IF) **Ag 57**
Underwater Divers
Automatic Orientation Control Device for Underwater Divers (76-DET-23) (A) **N 99**
Underwater Engineering
"Pool Games" (EN) **My 69**
Underwater Technology
Undersea "Tool Shop" (BTR) **D 49**
Unionization
Professionalism and Unionization (C) **Ag 41**
Unions
Unions for Engineers? (C) **D 47**
Unions for Engineers—The Only Way to Go **O 81**
Unny, T. E. Free Convection Heat Transfer Across Fluid Layers of Large Aspect Ratios (76-HT-37) (A) **O 102**
Unpainted Alloys
The Surface Absorption of Unpainted Alloys at 10.6 Microns (75-WA/HT-66) (A) **My 103**
Upp, E. L. Large Capacity Petroleum Measurement Systems (75-WA/FM-3) (A) **Je 118**
Upper-Bound Loads
Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) (A) **S 101**
Upsetting
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) (A) **Mr 101**
Upson, F. A. Nuclear Notes (C) **My 42**
Upwelling Atmospheric Radiance
Evaluation of Upwelling Infrared Radiance from the Earth's Troposphere (76-HT-5) (A) **O 98**
Uranium
Energy Forecast: Coal and Sunny (NR) **D 66**
Will We Run Out of Uranium? (ES) **F 14**
Urban Technology System
UTS: Accelerating Public Sector Technology Utilization (75-WA/Aero-2) (A) **My 98**
UTS: Solving Local Problems **Jl 35**
Urban Utilization
Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**
Urethane Foam
New Gap and Joint Filler (BTR) **D 60**
Urethane Panels
Improved Urethane Paneling (BTR) **O 59**
Urinary Incontinence
Mechanical Hardware Analysis of an Implantable Fluid System for Treatment of Urinary Incontinence (76-DE-26) (A) **S 91**
Urine Pretreatment
Electrolytic Urine Pretreatment (76-ENAs-19) (A) **O 95**
Ushiyama, I. J. Approximately Calculating Optimum Pressure Ratios for Various Gas Turbine Cycles (76-GT-21) (A) **Jl 89**
Utility Boilers
Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**
U-Tubes
Stress Analysis of a U-Tube Heat Exchanger Tubesheet with Integral Channel, Head and Unperforated Rim (76-PVP-58) (A) **D 104**
Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) (A) **Ag 100**

V

Vacuum Collection Systems
Operational Experience with a Vacuum Collection and Waste Incineration System Aboard a U.S. Coast Guard Cutter (76-ENAs-47) (A) **N 92**
Vacuum Columns
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) (A) **Ja 123**
Vacuum Pumps
Liquid-Ring Vacuum Pump (IF) **Ag 57**
Vacuum Seals
Performance of Convergent and Divergent Narrow Gap Vacuum Seals (75-WA/PID-4) (A) **My 97**
Vacuum Tanks
315,000-Liter Vacuum Tank (IF) **Jl 55**
Vacuum Wastewater
Characteristics of Vacuum Wastewater Transfer Systems (76-ENAs-43) (A) **N 91**
Vadasz, A. F. Gross Motion Analysis of Planar Linkages With Application to a Geared Five-Bar (76-DET-31) (A) **N 100**
Vajpayee, S. On Work Rests While Turning Slender Jobs (75-WA/Prod-21) (A) **Mr 103**
Valori, R. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) (A) **S 96**
Value Analysis
Value Analysis in Design and Construction (CB) **O 106**
Valve Closure
Predicting Optimum Two-Stage Valve Closure (75-WA/FE-2) (A) **Je 108**
Valve Design
Fluid Mechanics for the Valve Designer (76-PVP-71) (A) **D 105**
Van Hagan, T. Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **Jl 93**
van Heiningen, A. R. P. Numerical Prediction of the Flow Field and Impingement Heat Transfer Due to a Laminar Slot Jet (75-WA/HT-99) (A) **Je 116**
Vance, J. M. Torquewhirl—A Theory to Explain Non-synchronous Whirling Failures of Rotors with High Load Torque (76-DE-29) (A) **S 91**
Vankirk, J. An Automatic Balancer Design for a Vertical-Axis Clothes Washing Machine (76-DE-24) (A) **S 91**
VanSchaick, T. E. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) (A) **My 97**
Vaporization
Vaporization of LNG with Closed-Cycle Gas Turbine (76-GT-38) (A) **Jl 91**
Vara Prasad, C. M. An Investigation on the Diffusion of Momentum and Mass of Fuel in a Diesel Fuel Spray (76-DGP-1) (A) **Ag 96**
Variable Conductivity Soils
Unsteady Heat Conduction in Variable Conductivity Soils (76-WA/HT-89) (A) **My 106**
Variable Density Air Supply
A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **Jl 94**
Variable Geometry
The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **Jl 98**
Emissions Research on a Simple Variable Geometry Gas Turbine Combustor (75-WA/GT-12) (A) **F 81**
Variable Permeability
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (75-WA/HT-73) (A) **My 104**
Variable Pitch Turbofans
An Investigation into the Dynamic Performance of a Variable Pitch Turbofan Using a Hybrid Computer (76-GT-31) (A) **Jl 90**
Variable-Geometry Combustors
A Simple Variable-Geometry Combustor for the Automotive-Turbine Engine (76-GT-11) (A) **Jl 87**
Variable-Ratio Transmissions
A Two-Path Variable-Ratio Transmission With an Extended Range of Ratios (76-DET-37) (A) **N 100**
Variable-Setting-Angles
The Use of Experimental Interstate Data for Matching the Performance of Axial Compressor Stages Having Variable-Setting-Angle Blade Rows (76-GT-42) (A) **Jl 91**
Various Aspect Ratios
The Effects of Mainstream Turbulence Intensity and Pressure Gradient on Film Cooling Effectiveness for Cold Air Injection Slits of Various Aspect Ratios (75-WA/HT-17) (A) **Ap 101**
Vaughan, D. A. Corrosion and Deposits From Combustion of Solid Waste Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) (A) **My 99**
Vaughn, E. A. The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) (A) **Ja 124**. The Effects of Fiber Properties and Preparation on Trash Removal and Properties of Open-End Cotton Yarns (76-Tex-7) (A) **N 96**. The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) (A) **Ja 124**
Vaught, J. M. The Effect of Inlet Temperature and Pressure on an Industrial Turbine Engine Exhaust Emission (75-WA/GT-11) (A) **F 81**
V-Belt Transmission Drives
V-Belt Life Prediction and Power Rating (75-WA/DE-26) (A) **Mr 107**
Vee Gas Engines
Developing a New Series of Stationary Vee Gas Engines (76-DGP-14) (A) **Ag 98**
Veenema, R. J., Jr. Power Turbines for Ocean Thermal Energy Conversions Systems (75-WA/OcE-11) (A) **Ap 92**
Vector Methods
On Cage-Plane Motion (76-DET-2) (A) **N 97**
Vegetable Growing
Vegetable Growing by Computer (IF) **Ag 56**
Vegetation
Scrubber Sludge Supports Vegetation (BTR) **Ap 55**
Vehicle Ride Quality
The Effect of Elevated Guideway Construction Tolerances on Vehicle Ride Quality (75-WA/Aut-4) (A) **Ap 93**
A Human Model for Measuring Ride Quality **Jl 30**
Vehicle Suspension Systems
The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) (A) **Mr 106**
Vehicle Transit
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) (A) **Je 109**
Vehicular Gas Turbines
Problems of the Heat Exchanger for Vehicular Gas Turbines (76-GT-105) (A) **Ag 90**
Veldkamp, G. R. On Cage-Plane Motion (76-DET-2) (A) **N 97**
Velocity
Momentous Momentum (C) **N 42**
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) (A) **My 103**
Velocity Fluctuations
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanism (76-DET-10) (A) **N 97**
Velocity Measurements
Two-Phase Sonic Velocity Measurements for Separated Flow (75-WA/HT-34) (A) **Ap 103**
Velocity Ratios
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) (A) **N 98**
Velocity Variations
Film Cooling: The Effect of Velocity Variation in the Slot (75-WA/GT-20) (A) **F 83**
Velsher, B. Stochastic Characterization of Macro- and Microerrors of Journal Bearing Roundness (76-DET-51) (A) **N 102**
Velzy, C. O. Elections to Fellow Grade **Ag 88**
Vent Pipes
Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) (A) **Je 110**
Ventricular Walls
Stresses in Ventricular Wall (76-APM-31) (A) **O 104**
Venturi
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) (A) **Je 108**
Venuvinod, P. K. On the Estimation of Electric Resistance of the Chip-Formation Zone in Metal Cutting (75-WA/Prod-20) (A) **Mr 102**
Vepa, K. Fault Analysis of a Gas Turbine HTGR (76-GT-99) (A) **Jl 98**. Heat Exchanger Design Considerations for Gas Turbine HTGR Power Plant (76-GT-53) (A) **Jl 93**
Verbeek, P. COMETHE III-H for Fuel Rod Behavior Predictions (75-WA/HT-75) (A) **My 104**
Vernet, J. L. Decomposition of Some Halogenated Hydrocarbons Over a Fixed Bed of Platinum-Alumina, Alumina or Molecular Sieves (76-ENAs-2) (A) **O 92**
Vernon, R. *(editor)* The Oil Crisis (CB) **S 103**
VerNooy, B. Heavenly Help for SI (C) **Je 47**
Vertical Cylinders
Combined Convective Heat Transfer from Vertical Cylinders in a Horizontal Fluid Flow (76-HT-41) (A) **O 102**
Vertical Elutriator
Particle Sizing of Dust Collected With a Vertical Elutriator (76-Tex-10) (A) **N 96**
Vertical Plates
An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Vertical Sheet Packing
Counter-Flow Evaporative Cooling Tower Performance Modeling and Verification (75-WA/HT-43) (A) **My 100**

Vertical Surfaces
Application of a K- Turbulence Model to Natural Convection from a Vertical Isothermal Surface (76-HT-17) (A) **O 99**
Natural Convection from a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) (A) **My 103**
Veuillot, Jean-Pierre Calculation of the Quasi Three-Dimensional Flow in a Turbomachine Blade Row (76-GT-56) (A) **Jl 93**
V-Groove Collectors
Design and Experimental Evaluation of a V-groove Solar Collector (76-HT-53) (A) **O 104**
Vibrating Feeders
Eliminating Unwanted Vibration (BTR) **S 52**
Vibrating Rods
Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**
Vibrating Systems
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) (A) **O 104**
Vibration Analysis
Influence of Shaft Runout on Vibration Analysis (76-DE-38) (A) **S 92**
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) (A) **N 103**
Vibration Characteristics
Perforated Heat Exchanger Surfaces. Part 1—Flow Phenomena, Noise and Vibration Characteristics (75-WA/HT-8) (A) **Ap 100**
Vibration Detection
Vibration Detection of Component Operability (76-ENAs-18) (A) **O 95**
Vibration Isolation
A Vibration Isolation Strategy for Small Engines with Unbalance at One-Third Operating Speed: The Wankel (76-DE-27) (A) **S 91**
Vibration Problems
Vibration Problems with High Pressure Centrifugal Compressors (75-Pet-28) (A) **Ja 115**
Vibrations
Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) (A) **Mr 105**
Determination and Probabilistic Foundation Forces Resulting from an Unbalanced Turbine (76-GT-120) (A) **Ag 92**
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**
Free Vibration of Two Span Rectangular Plates (75-WA/PVP-25) (A) **Ap 99**
Vibratory Wear
Vibratory Wear of Fuel Rods (75-WA/HT-79) (A) **My 105**
Video Analysis Equipment
Troubleshooting in Real Time (BTR) **D 57**
Viking Orbiter System
Dynamic Analysis and Test Results of the Viking Orbiter (75-WA/Aero-7) (A) **My 98**
Viking Spacecraft
Nuclear Fuel Aboard Viking (BTR) **Ag 44**
Villa, A. A Protest . . . (C) **Jl 40**; *see also* . . . and a Reply (C) **Jl 42**
Vinyl Systems
Durable Paint Job (BTR) **D 50**
Virus Exclusion
Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**
Viscid Flow
Three-Dimensional Flow Field in Rocket Pump Inducers—Part 2: Three-Dimensional Viscid Flow Analysis, and Hot Wire Data in Three-Dimensional Mean Flow and Turbulence Inside the Rotor Passage (75-WA/FE-21) (A) **Je 110**
Viscoelastic Response
Viscoelastic Response of the Corneo-Scleral Shell Under Tonometer Loading (75-WA/Bio-2) (A) **Mr 96**
Viscosity
A Critical Survey of High Pressure Lubricant Models (75-Lub-15) (A) **Ja 120**
Viscous Damping
Identification of Viscous Damping in Structures from Modal Information (76-APM-36) (A) **O 105**
Viscous Flow
Measurement and Prediction of 3-D Viscous Flows in Low-Aspect-Ratio Turbine Nozzles (76-GT-73) (A) **Jl 95**
Viscous Fluids
Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**
Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) (A) **S 100**
Viscous Liquid Films
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) (A) **Ja 118**
Visible Plumes
Visible Plume Investigation on a Combined Cycle Power Plant (76-GT-15) (A) **Jl 87**
Viskanta, R. Analysis of Flat-Plate Solar Collectors with Radiatively Selective Thin-Film Coated Cover Plates (76-HT-52) (A) **O 103**; Elections to Fellow Grade **My 92**
Visual Aids
A Bibliography of Publications, Graphics and Visual Aids for Technology Transfer in Fluid Power (76-DET-76) (A) **Q 94**
Vitelli, J. M. A Test Program to Provide an Economic Evaluation of Techniques to Control Corrosion in Gas Turbines (76-GT-87) (A) **Jl 96**
Vitiated Air
A Simple Gas Turbine Combustor NO_x Correlation Including the Effect of Vitiated Air (76-GT-5) (A) **Jl 86**
Vliet, G. C. Natural Convection Mass Transfer in Salt-Brine Interfaces (76-HT-33) (A) **O 100**
Vocabulary
Worterbuch des patentwesens in funf sprachen: Deutsch, Englisch, Franzosisch, Spanisch, Russisch (CB) **D 106**
Volatile Liquids
Boiling Modes of Volatile Liquid Drops in an Immiscible Liquid Depending on Degree of Superheat (76-HT-13) (A) **O 98**
Voltin, M. J. Fuel Conservation and the Breeder Reactor **Mr 28**
Volume Heating
Transient Behavior of a Volume-Heated Boiling Pool (75-WA/HT-31) (A) **Ap 103**
Voluntary Standards System
Proposed Bill Would Regulate Voluntary Standards **S 81**
von Cleve, H. H. Comparison of Different Combinations of Wet and Dry Cooling Towers (75-WA/Pwr-10) (A) **F 86**
von Rosenberg, D. U. The Exact Solution of the Translational Acceleration of a Low Modulus Elastic Medium in Rigid Spherical Shells—Implications for Head Injury Models (75-WA/APM-22) (A) **Je 121**
Vortex Shedding
A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula (75-Pet-29) (A) **Ja 116**
Vortex-Induced Heat Transfer
Hypersonic Viscous Shock Layer Analysis of Leeward Vortex-Induced Heat Transfer on a Sharp Cone at High Angles of Incidence (76-HT-43) (A) **O 103**
Vortices
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**
Vrable, D. L. Binary Plant Cycle Studies for the Gas Turbine HTGR (76-GT-39) (A) **Jl 90**; A Secondary Power Plant for Gas Turbine-HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**
Vroon, D. W. FFTF Outlet Nozzle Design Considering Natural and Forced Convection Flow in Parallel Annuli, with Heating (75-WA/HT-105) (A) **Je 116**

W

Wachel, J. C. Nonsynchronous Instability of Centrifugal Compressors (75-Pet-22) (A) **Ja 115**
Wada, B. K. Dynamic Analysis and Test Results of the Viking Orbiter (75-WA/Aero-7) (A) **My 98**
Wade, M. V. Flow Measuring Devices (76-DE-23) (A) **S 90**
Wake
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**
Walburn, F. J. A Constitutive Equation for Whole Human Blood (75-WA/Bio-12) (A) **Mr 100**
Wald, G. Technologically Redesigning Living Organisms (BTR) **D 48**
Waldron, K. J. Elimination of the Branch Problem in Graphical Burmester Mechanism for Four Finitely Separated Positions (75-WA/DE-23) (A) **Mr 106**
Graphical Solution of the Branch and Order Problems of Linkage Synthesis for Multiply Separated Positions (76-DET-16) (A) **N 98**; The Manipulator Interference Problem (76-DET-68) (A) **D 93**
Waligora, J. M. Environmental Parameters of Shuttle Support for Life Sciences Experiments (76-ENAs-24) (A) **O 96**
Walker, J. L. Fireside Corrosivity Studies on Austenitic Stainless Steels Used in Utility Boilers (75-WA/CD-9) (A) **My 100**
Walking Motion Analysis
An Analytical Analysis of Walking (75-WA/Bio-4) (A) **Mr 99**
Wall Heat Flux
Heat Transfer in the Entrance Region of a Straight Channel: Laminar Flow with Uniform Wall Heat Flux (76-HT-20) (A) **O 100**
Wall Jet Receivers
An Experimental Investigation of Wall Jet-Receiver Interaction (76-FE-18) (A) **Ag 95**
Wall Jets
Some Experiments on Laminar Wall Jets (75-WA/Fics-7) (A) **Je 115**
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) (A) **Je 108**
Wall Pipes
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
Wall Thickness Transducers
Myocardial Wall-Thickness Transducer (BTR) **D 53**
Wallace, F. J. The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **Jl 98**; A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**
Walowit, J. A. Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) (A) **S 98**
Walter, W. C. Development of a Jacketed Pressure Vessel: A Design Case Problem (76-DE-33) (A) **S 91**
Walton, T. F. *(author)* Communications and Data Management (CB) **D 107**
Walzer, P. Fuel Economy Study of Future Metallic and Ceramic Automotive Gas Turbines (76-GT-104) (A) **Ag 90**
Wambold, J. C. Cleanup Questioned (C) **Je 46**; A Human Model for Measuring Ride Quality **Jl 30**; New Twist for Oil Spill Cleanup **F 28**
Wamgsganss, M. W. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) (A) **S 100**
Wang, A. D. D. On Elastic Oscillations of a Thick-Walled Cylindrical Shell Subjected to Initial Finite Twist (75-WA/APM-5) (A) **Je 119**
Wang, I-Chih Thermal Stresses Induced into Two Plane Strain Sectors Having Different Material Properties (76-PVP-36) (A) **D 101**
Wang, N. S. Heat Transfer by Convection and Radiation in an Absorbing, Scattering Medium Flowing Between Parallel Plates (76-HT-50) (A) **O 104**
Wankel Engine
A Vibration Isolation Strategy for Small Engines with Unbalance at One-Third Operating Speed: The Wankel (76-DE-27) (A) **S 91**
Ward, A. L. Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**
Warda, H. A. Gas-Solids Flow in Supersonic Nozzles (75-WA/HT-35) (A) **Ap 103**
Wardell, J. B. A Proposed Vortex-Shedding Modification of the AISC Beam-Column Design Formula (75-Pet-29) (A) **Ja 116**
Warncke, R. *(editor)* Gmelin Handbuch der Anorganischen Chemie (CB) **My 108**
Warren, J. H. Current Advances in Surface Characterization (76-DET-88) (A) **D 95**
Warren, W. J. A Region's Stand: How it Happened (C) **D 46**
Warzee, G. A Finite Element Method for Through-Flow Calculations in Turbomachines (76-FE-12) (A) **Ag 95**
Wasserbach, A. E. Nuclear Notes (C) **My 42**
Waste
Cost of Methanol Production from Coal, Waste and Wood (ES) **Jl 17**

It's Economic to be Wasteful (ES) **D 16**

Waste Disposal

Foundry Wastes vs. the Law (BTR) **O 57**

Solid Waste Disposal—Facts vs. Fiction **My 76**

Waste Energy

Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) (A) **Ja 111**

Waste Gases

Gas Turbines Burning Dirty Fuels (76-GT-66) (A) **Jl 94**

Waste Heat

Improved Specific Fuel Consumption of Open Cycle Gas Turbines by Utilization of Waste Heat (76-GT-45) (A) **Jl 92**

Waste Heat Management

Waste Heat Management of Steam-Electric Power Plants (76-ENAs-44) (A) **N 91**

Waste Heat Utilization

A Secondary Power Plant for Gas Turbine—HTGR Waste Heat Utilization (75-WA/HT-45) (A) **My 101**

Waste Heat Utilization Through the Use of Heat Pipes (75-WA/HT-48 (A) **My 101**

Waste Incineration

Operational Experience with a Vacuum Collection and Waste Incineration System Aboard a U.S. Coast Guard Cutter (76-ENAs-47) (A) **N 92**

Waste Oil Recovery

Waste Oil Recovery and Disposal (CB) **Ag 103**

From Waste to Resource through Processing **Jl 71**

Waste Processing Systems

Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**

Waste Recovery

Advance in Waste Recovery (BTR) **N 47**

Waste Utilization

National Conference Will Stress Waste Utilization (NR) **Mr 66**

Waste Water Reclamation

Direct Raw Sewage Reverse Osmosis: Reclamation of Waste Water at San Diego (76-ENAs-45) (A) **O 97**

Wastewater Transfer Systems

Characteristics of Vacuum Wastewater Transfer Systems (76-ENAs-43) (A) **N 91**

Wastewater Treatment Systems

Shipboard Laundry Wastewater Treatment Systems (76-ENAs-48) (A) **N 91**

Watanabe, I. Reversed Flow Phenomena within Centrifugal Compressor Channels at Lower Flow Rate (76-GT-86) (A) **Jl 96**

Watanabe, K. Heat Exchanger Augmentation by Radiation Plates (76-HT-3) (A) **O 98**

Watanabe, O. Flexibility and Stress Factors of Pipe Bends—An Analysis by the Finite Ring Method (76-PVP-40) (A) **D 102**

Watanabe, Y. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**

Water

Flashing Flow of Initially Subcooled Water in Convergent-Divergent Nozzles (76-HT-12) (A) **O 98**

Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**

Water Base Mud

Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) (A) **Ja 117**

Water Biophotolysis

Fuel of the Future: Biophotolysis of Water? (BTR) **Mr 54**

Water Film Flow

Heat Transfer to Developing Water Film Flow Over Cylindrical Surfaces (75-WA/HT-54) (A) **My 102**

Water Fountains

Functional Fountains (BTR) **My 57**

Water Hyacinths

The Amazing Hyacinth (BTR) **Je 50**

Water Hyacinths Make Great Fuel (ES) **O 19**

Water Jets

Automated Water Jet Cleaning **D 40**

Use of the Water Jet in Automated Production Cutting (75-WA/Aut-21) (A) **Ap 95**

Water Level Gage

Electronic Water Level Gage (IF) **F 53**

Water Models

Jet Mixing as Defined by Water Models (75-WA/GT-2) (A) **F 80**

Water Monitoring

Automated Water Monitoring (BTR) **Ag 48**

Water Process Reclamation

Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**

Water Prospecting

Skymapping High-Water Zones (BTR) **Je 63**

Water Quality Monitor

Development of a Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**

Water Quality Storage

The Effects of Storage on Water Quality (CB) **Ag 102**

Water Quality Studies

The Worcester Water Quality Study: A Joint Venture in Community Service (75-WA/TS-7) (A) **Mr 95**

Water Reactors

Analyses of Rewetting in Water Reactor Emergency Core Cooling Inclusive of Heat Transfer in the Unwetted Region (75-WA/HT-32) (A) **Ap 102**

Effect of a Rod Bowed to Contact on Critical Heat Flux in Pressurized Water Reactor Rod Bundles (75-WA/HT-77) (A) **My 104**

A Simple Model for Estimating Time to Critical Heat Flux in a Pressurized Water Reactor Loss of Coolant Accident (76-HT-9) (A) **O 98**

Single Tube and Rod Bundle Blowdown Heat Transfer Experiments Simulating Pressurized Water Reactor LOCA Conditions (76-HT-11) (A) **O 99**

Water Resource Management

The Allocative Conflicts in Water-Resource Management (CB) **Ja 126**

Water Shortages

World Water Situation: Poor (NB) **D 72**

Water Treatment

Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) (A) **O 94**

Water Vapor

A Psychrometric Method for Determining Water Vapor in Flue Gas (75-WA/APC-8) (A) **Je 113**

Water Viscosity

New Values for the Viscosity of Water Substance **Jl 79**

Waterless Flush System

Closed Loop "[R]oil Flush" (BTR) **F 49**

Waterman, W. F. Measurement and Prediction of 3-D Viscous Flows in Low-Aspect-Ratio Turbine Nozzles (76-GT-73) (A) **Jl 95**

Water/Residual Oil Emulsions

The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) (A) **Je 112**

Waterways

Start with Nature (ES) **D 16**

A Waterway Changes with Time **Ja 103**

Watson, D. C. Using Rundown Time as Bearing Life Indicator **My 20**

Watson, F. H. Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**

Watson, P. J. A Closed Circuit Variable Density Air Supply for Turbomachinery Research (76-GT-62) (A) **Jl 94**

Waugh, C. E. SPRINT I Environmental Control (76-ENAs 27) (A) **O 93**

Wave Impact Loads

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) (A) **Ap 91**

Wave Models

Storm Wave Model (NB) **Jl 63**

Wave Propagation

Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) (A) **S 99**

Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **Jl 98**

Wave-Power Generation

Japan Looks at Wave-Power Generation (BTR) **Ag 51**

Wax

An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) (A) **Ap 104**

Wayne, S. F. Cryogenic Process Removal of Insulation from Electrical Wire (75-WA/PID-7) (A) **My 97**

Way-Nee, D. Toward Laser Engines (C) **D 46**

Wear

Attritious Wear of Silicon Carbide (75-WA/Prod-36) (A) **Ap 105**

Effect of Magnetic Field on Wear (75-PTG-5) (A) **Ja 114**

Fracture and Wear as Factors Affecting Stochastic Tool-Life Models and Machining Economics (75-WA/Prod-8) (A) **Mr 102**

Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) (A) **S 97**

Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) (A) **Ja 121**

Vibratory Wear of Fuel Rods (75-WA/HT-79) (A) **My 105**

Wear Control

New Wear Control Handbook **Ap 83**

Wear Control Research

OTA Stresses Need for Wear Control Research (NR) **Jl 61**

Wear Performance

Wearing Well in Corrosive Environment (BTR) **My 49**

Wear Process

Abrasive Impact Wear of Type (75-Lub-28) (A) **Ja 121**

Wear-Resistant Gradients

Tools That Stay Sharp (BTR) **N 53**

Weather Forecasting

Weather Forecasting Looks to the Sun (BTR) **D 56**

Weather Satellites

Mcidas, the Superhuman Machine (BTR) **F 49**

Weaver, F. L. Machine Design Techniques **F 16**; Mechanical Drive Turbines and Energy Conversion for the 80's (75-WA/Pwr-1) (A) **F 85**

Weaver, W. H. Alaskan Connection Appreciated (C) **Ja 37**

Weaving Looms

Power Input to Weaving Looms Driving Motors (76-Tex-5) (A) **N 95**

Webb, B. *(author)* The British Internal-Combustion Locomotive: 1894–1940 (CB) **Ja 126**; Year by Year (C) **Ja 34**

Weber, T., Jr. The Precision Manufacturing of Cams (76-DE-37) (A) **S 92**

Webjörn, J. Metricomment (C) **My 44**

Wedges

Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) (A) **S 99**

Wehlage, E. F. Geothermal Energy Needed: Effective Heat Transfer Equipment **Ag 27**

Weight Lifting Analysis

On the Validity of Biomechanical Models of the Low-Back for Weight Lifting Analysis (75-WA/Bio-1) (A) **Mr 99**

Weights and Measures

For Good Measure: A Complete Compendium of International Weights and Measures (CB) **Ag 103**

Weihs, D. Axisymmetric Potential Flow Over Two Spheres in Contact (75-WA/APM-26) (A) **Jl 99**

Weikert, W. F. Effects of Dimensional Variations on the Performance of a Fluidic Or/Nor Gate (75-WA/Flcs-8) (A) **Je 115**

Weinberg, M. S. A Multi-Variable Control for a Turbofan Engine Operating at Sea Level Static (76-GT-71) (A) **Jl 95**

Weinberg, R. Stereoscopic Instrumentation for Analyzing Gross Motion (76-DET-69) (A) **D 93**

Weisman, J. Two-Phase Pressure Drop Across Abrupt Area Changes in Oscillatory Flow (75-WA/HT-3) (A) **Ap 99**

Weitsman, Y. Wave Propagation and Parametric Instability in Materials Reinforced by Fibers With Periodically Varying Directions (75-WA/APM-27) (A) **Jl 98**

Welch, F. W. Testing and Evaluation of Elastomeric Seals for Sodium-Cooled Fast Reactor Systems (75-WA/NE-1) (A) **F 79**

Welch, R. E. Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**

Weld Configurations

Reliability of Tube-to-Tubesheet Weld Configurations in LMFBR Steam Generators (76-PVP-54) (A) **D 103**

Weld Deposits

Elevated Temperature Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) (A) **Je 112**

Weld Metals

Creep Behavior of SMA Type Weld Metal With Controlled Residual Elements (75-WA/PVP-19) (A) **Ap 99**

Weld Sealants

"Anaerobic" Sealant (BTR) **Je 59**

Welded Pipe Joints

Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**

Welded Valves
Mechanical Properties of Welded Cast Steels for Arctic Service (75-Pet-24) (A) **Ja 115**
Welding
High Deposition Rate Welding of Heavy Wall Pipe: A Comparison of Submerged Arc Welding and Submerged Arc with Metered Powder Metal Additions (75-Pet-36) (A) **Ja 116**
Long-Lived Welding Tips (BTR) **Je 57**
Welding Supplies
Welding Supplies May Cause Short (NB) **N 65**
Welding Techniques
Laser Beam Welding (IF) **D 64**
Welds
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**
Well Bores
Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) (A) **Ja 117**
Wellauer, E. J. Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) (A) **Ja 114**
Wells
The Application of Circulation Rate Control for Kicks in Wells Which Cannot Be Shut In (75-Pet-35) (A) **Ja 117**
Wells, A. F. Development of a Preliminary Design of a Method to Measure the Effectiveness of Virus Exclusion During Water Process Reclamation at Zero-G (76-ENAs-32) (A) **O 96**
Wells, G. W. Operational Plans for Life Science Payloads—from Experiment Selection Through Post-flight Reporting (76-ENAs-63) (A) **N 94**
Wells, M. K. Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
Wescott, K. R. Field Experience with the Pace Control System (76-GT-106) (A) **Ag 90**
Wesenberg, D. L. Elastic Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) (A) **O 105**
Wessel, A. E. *(author)* Computer-Aided Information Retrieval (CB) **F 88**
Wessels, P. S. The Wheel Story (C) **Jl 40**
Wessling, F. C., Jr. A Solar Heating System for a Northern New Mexico Adobe House (75-WA/Sol-11) (A) **Mr 94**
West, S. J. Development of a Water Quality Monitor for Spacecraft Application (76-ENAs-10) (A) **O 94**
Westwater, J. W. Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**
Wet Oxidation Systems
Design, Fabrication and Testing of a Spacecraft Wet Oxidation System Including Trash Pulverization Studies (76-ENAs-15) (A) **O 94**
Whalley, P. B. Non-Equilibrium Effects in Heated and Unheated Annular Two-Phase Flow (75-WA/HT-7) (A) **Ap 100**
Wheatley, C. W. Elections to Fellow Grade **N 87**
Wheeler, L. T. Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) (A) **S 99**
Wheelsets
Hunting Stability of Rail Vehicles with Torsionally Flexible Wheelsets (75-WA/RT-2) (A) **F 76**
Whicker, D. Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) (A) **Ja 119**
Whipple, J. C. Application of the ASME Boiler and Pressure Vessel Code and RDT Standards to the Clinch River Breeder Reactor Plant Sodium-Heated Steam Generator (75-Pwr-19) (A) **Ja 112**
Whitby, K. T. Measurement of Diesel Exhaust Particle Size Distributions (75-WA/APC-5) (A) **Je 113**
White, A. A., III Clinical Biomechanics of the Cervical Spine (75-WA/Bio-7) (A) **Mr 99**
White, D. J. Advanced Low NO_x Combustors for Supersonic High-Altitude Aircraft Gas Turbines (76-GT-12) (A) **Jl 87**
White, G. A Two-Path Variable-Ratio Transmission With an Extended Range of Ratios (76-DET-37) (A) **N 100**
White, J. A. Operational Experience with a Vacuum Collection and Waste Incineration System Aboard a U.S. Coast Guard Cutter (76-ENAs-47) (A) **N 92**
White, V. P. *(author)* Grants: How to Find Out About Them and What To Do Next (CB) **Mr 108**
Whitelaw, J. H. The Effectiveness of Combined Tangential and Normal Film-Cooling Slots with Finite Lip (76-HT-30) (A) **O 101**; The Effectiveness of Two-Dimensional Film-Cooling Over Curved Surfaces (76-HT-31) (A) **O 102**
Whitfield, A. The Effect of Variable Geometry on the Operating Range and Surge Margin of a Centrifugal Compressor (76-GT-98) (A) **Jl 98**; A Unified Approach to the One-Dimensional Analysis and Design of Radial and Mixed Flow Turbines (76-GT-100) (A) **Ag 90**
Whitfield, K. C. Carbon Fibers (C) **Mr 45**
Whitney, D. E. Feedback Control of Two Beam, Two Joint Systems With Distributed Flexibility (75-WA/Aut-26) (A) **Ap 96**
Whyte, R. R. *(editor)* Engineering Progress Through Trouble (CB) **My 108**
Wide Gage
An Investigation of Factors Contributing to Wide Gage on Tangent Railroad Track (75-WA/RT-1) (A) **F 76**
Wiebelt, J. A. Design and Experimental Evaluation of a V-groove Solar Collector (76-HT-53) (A) **O 104**
Wiederrich, J. L. Momentum Balancing of Four-Bar Linkages (76-DET-28) (A) **N 99**
Wiedersum, G. C. For More Facts, Less Fiction (C) **Jl 41**
Wierzbicki, T. On an Extremum Principle for Mode Form Solutions in Plastic Structural Dynamics (75-WA/APM-6) (A) **Je 119**
Wilchins, S. J. Cryosurgery of Lesions Through Contact Freezing and Estimates of Penetration Times (75-WA/Bio-11) (A) **Mr 100**
Wilcock, D. F. Credit Where It's Due (C) **N 43**
Wilcox, H. A. *(author)* Hothouse Earth (CB) **F 89**
Wildhorn, S. *(author)* How to Save Gasoline: Public Policy Alternatives for the Automobile (CB) **O 106**
Willcutt, G. J. E., Jr. Cost Optimization of Solar Heating of Buildings in Northern Regions (75-WA/Sol-9) (A) **Mr 93**
Williams, A. F. *(author)* Substitute Natural Gas: Manufacture and Properties (CB) **O 106**
Williams, E. F., III Nader and Tribus Articles Related (C) **Je 49**
Williams, H. A., Jr. A Versatile Two-Cycle Diesel Engine—The EMD Model 645 Series (76-DGP-5) (A) **Ag 97**
Williams, H. E. Thermal Stress Analysis of Thin, Spherical Shells (76-DET-104) (A) **D 97**
Williams, J. R. Construction and Evaluation of Linear Segmented Concentrators (75-WA/Sol-6) (A) **Mr 93**
Williams M. A. Energy Conservation in a Large Chemical Company (76-IPC-Pwr-5) (A) **S 93**
Willis, T. A Nonlinear Mathematical Model of the Dynamics of a Railroad Freight Car/Freight Element (76-DE-42) (A) **S 92**; Techniques for Film Thickness Measurements in Elastohydrodynamic Lubrication (76-DET-79) (A) **D 94**
Willmert, K. D. Optimum Design of a Complex Planar Mechanism (76-DET-47) (A) **N 101**
Wilson, H. L. The PT-ECON—A New Injector Concept for the D.I. Diesel to Improve Smoke and Fuel Consumption at Low Emission Levels (76-DGP-13) (A) **Ag 98**
Wilson, J. G., Sr. Unions for Engineers? (C) **D 47**
Wilson, J. R. Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Wilson, M. P., Jr. Measurement Error Due to the Bending of Orifice Plates (75-WA/FM-6) (A) **Je 119**; Status of the Analysis of Flow Through Concentric Square Edged Orifices (75-WA/FM-4) (A) **Je 118**
Wilson, W. R. D. Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) (A) **Ja 120**; Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**; Lubrication by a Melting Solid (75-Lub-26) (A) **Ja 121**; A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) (A) **Ja 122**
Wind Energy
Handbook of Solar and Wind Energy (CB) **F 89**
A New Wind Energy Conversion Program (ES) **S 18**
Wind Energy Utilization, A Bibliography with Abstracts, Cumulative Volume 1944/1974 (CB) **Ja 127**
Wind Generation Systems
ERDA Tests Wind Power (ES) **Ap 23**
Wind Harmonics
Effect of Wind Harmonic and Gust Torques on Induction Generators—Part 1 (75-WA/Pet-4) (A) **My 95**
Wind Power
Wind Power (IF) **S 62**
Wind-Powered Electric Utility Plants (75-WA/Pet-1) (A) **My 95**
Wind Tunnels
Design of an Annular Channel for Testing Highly Loaded Compressor Blades; Comparison Between Theory and Experiments (76-GT-79) (A) **Jl 96**
Wind Turbines
Hundred-Kilowatt Wind Turbine (BTR) **Ja 41**
Theoretical Performance of Vertical Axis Wind Turbines (75-WA/Ener-1) (A) **Mr 96**
Windmill Design
New Information on Windmill Design (EN) **Je 81**
Windmill Generators
Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**
Windmills
Tilting at Giant Windmills (ES) **O 18**
Winer, W. O. Chemical Effects of Lubrication in Contact Fatigue, Part 3: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) (A) **Ja 124**; Fluid Film Bearing Housing Design for a Hot Ambient Environment (76-GT-93) (A) **Jl 97**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) (A) **Ja 120**; Prediction of Traction in Sliding EHD Contacts (75-Lub-7) (A) **Ja 119**
Winkleblack, R. K. LMFBR Hardware and Commercial Standards (75-WA/NE-6) (A) **F 79**
Winkler, J. E. Determining the Optimum Number of Pulverizer Mill-Mill Feeder Sets for a Pulverized Coal Fired Generating Unit (75-WA/Pwr-12) (A) **F 86**
Winn, C. B. Dynamic Simulation for Performance Analysis of Solar Heated and Cooled Building (75-WA/Sol-8) (A) **Mr 93**
Winn, L. W. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) (A) **S 97**
Winslow, A. M. Analysis of Efficient Impulse Delivery and Plate Rupture by Laser-Supported Detonation Waves (75-WA/HT-50) (A) **Ap 104**
Winter, D. C. Blood Velocity Patterns in Coronary Arteries (75-WA/Bio-3) (A) **Mr 99**
Wire-Wrapped Fuel Assemblies
Flow-Induced Vibrations of Spiral Wire-Wrapped Fuel Assemblies (75-WA/HT-76) (A) **My 104**
Wire-Wrapped Vessels
Autofrettaged Wire-Wrapped Pressure Vessels (76-PVP-47) (A) **D 103**
Wires
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) (A) **Ag 94**
Wirsching, P. H. On the Behavior of Statistical Models Used for Design (75-WA/DE-28) (A) **Mr 107**
Wisler, D. C. Shock Wave and Flow Velocity Measurements in a High Speed Fan Rotor Using the Linear Velocimeter (76-GT-49) (A) **Jl 92**
Withers, J. G. Structural Characteristics of Helical-Corrugated Heat-Exchanger Tubes (75-WA/HT-14) (A) **Ap 101**
Withey, D. J. Control and Automation of Single Generator Combined Cycle Plants (75-Pwr-18) (A) **Ja 112**
Witkin, D. E. Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) (A) **D 104**
Witt, F. J. Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**
Witt, R. H. Effect of Maintenance on Gas Turbine Reliability (76-GT-68) (A) **Jl 94**
Witte, L. C. Thermophysical Properties of Foodstuffs (76-HT-59) (A) **N 88**
Woelfle, R. M. *(editor)* A Guide for Better Technical Presentations (CB) **Ap 107**
Wohlschlegel, D. H. Gas Turbine Cycles for the Process Industry (76-GT-102) (A) **Ag 90**
Wojcikowski, K. A. Jet Mixing as Defined by Water Models (75-WA/GT-2) (A) **F 80**
Wolman, L. M. G. Unions for Engineers? (C) **D 47**
Wolowodiuk, W. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) (A) **D 100**
Women's Liberation
Magazine Publishes its First "Women's Issue" (EN) **My 68**
Wong, B. K. The Ground Temperature Regime and Its Relationship to Soil Properties and Ground Surface Cover (75-WA/HT-98) (A) **Je 116**
Wood
Cost of Methanol Production from Coal, Waste and Wood (ES) **Jl 17**
Wood, P. C. The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**

Wood Planar Noise
Wood Planar Noise (75-WA/PID-6) (A) **My 97**
Wood-Fueled Boilers
From Oil to Wood Chips (BTR) **Ap 61**
Woodhull, A. S. Evaporator Design for Sea Solar Power Cycles (75-WA/Sol-5) (A) **Mr 93**
Work Rests
On Work Rests While Turning Slender Jobs (75-WA/Prod-21) (A) **Mr 103**
Work Systems Package
Undersea "Tool Shop" (BTR) **D 49**
Work Zones
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) (A) **Ja 119**
Workpiece Grain Size
Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) (A) **Ap 104**
Work-Restricted Forging
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) (A) **Mr 102**
World Atlas
Times Atlas of the World (CB) **S 103**
World Federation of Engineering Organizations
A Question (C) **Ja 34**
World Population
World Population Up 72 Million (NB) **My 65**
Wormley, D. N. Computer-Aided Design Procedure for Laminar Fluidic Systems (75-WA/Flcs-1) (A) **Je 14**; Plenum Air Cushion/Compressor-Duct Dynamic Interactions (75-WA/Aut-23) (A) **Ap 93**
Worst Case Loading
Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**
Wortman, D. J. Turbine Environmental Behavior in LM2500 Applications (76-GT-36) (A) **Jl 91**
Wright, D. Emulsions as Fuels (75-WA/Fu-3) (A) **My 95**; **N 36**
Wright, G. P. Logistic Support of Aero Derivative Marine Gas Turbines in the Royal Navy (76-GT-44) (A) **Jl 92**
Wright, J. H. The Onset of Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) (A) **O 101**
Wright, J. P. Thermal Control Systems for Low Temperature Shuttle Payloads (76-ENAs-65) (A) **N 94**
Wright, R. R. The Outlook for Petroleum Power Plant Fuels (76-IPC-Pwr-6) (A) **S 93**
Wrought Superalloys
Effects of C and Mf Concentration on the Mechanical Properties of Wrought Superalloys Based on NASA IIB-11 Produced from Prealloyed Powders (76-GT-112) (A) **Ag 91**
Wu, C. L. S. A Determination of Contact-Loss at a Bearing of a Linkage Mechanism (76-DET-43) (A) **N 101**
Wu, E.-R. Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) (A) **Ja 121**
Wu, S. M. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) (A) **Mr 101**; An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) (A) **Mr 103**; A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) (A) **Mr 102**
Wu, Y. C. Effect of Nitrogen Limitation on Metabolic Activities of Activated Sludge (76-ENAs-40) (A) **O 97**
Wyckoff, H. L. An Assessment of Economic Incentives for the Liquid Metal Fast Breeder Reactor (75-WA/NE-5) (A) **F 79**
Wyder, C. G. ME Abroad (C) **Jl 42**
Wydeven, T. The Preparation of Calcium Superoxide for Air Breathing and Scrubbing Applications (76-ENAs-1) (A) **O 92**
Wyler, J. S. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) (A) **Je 118**

X

Xistris, G. D. Using Rundown Time as Bearing Life Indicator **My 20**
X-Ray Machines
Transient Heat Conduction in the Linear Acceleration Target Plate of a High Energy X-Ray Machine (75-WA/HT-84) (A) **My 106**

Y

Yadigaroglu, G. An Investigation of Momentum and Heat Transport in Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) (A) **Ap 99**
Yagawa, G. A Parametric Analysis of Creep Buckling of Shallow Spherical Shell by the Finite Element Method (76-PVP-45) (A) **D 103**
Yagishita, H. An Experimental Study on Variations of Rotational Speed and Flapping Vibrations in Belt Drives (76-DET-102) (A) **D 97**
Yakut, M. M. Conceptual Design of a Biological Specimen Holding Facility (76-ENAs-30) (A) **O 96**
Yalamanchili, R. Accuracy, Stability, and Oscillation Characteristics of Transient Two-Dimensional Heat Conduction (75-WA/HT-85) (A) **My 106**
Yamaba, R. Heavy Section Steel Plates for Reactor Pressure Vessels Produced by Basic Oxygen Process (76-PVP-56) (A) **D 103**
Yamada, Y. Verification and Qualification Activities in Japan of Inelastic Analysis Computer Programs (76-PVP-44) (A) **D 102**
Yamaguchi, K. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) (A) **Mr 101**
Yamaguchi, Y. An Experimental Research on the Transient Phenomena of a Pumped-Storage Power Station (76-FE-17) (A) **Ag 95**
Yamazaki, S. Development of The Nissan YTP-12 Gas Turbine Engine (76-GT-101) (A) **Ag 90**
Yang, A. Free Convection Heat Transfer to Newtonian and Non-Newtonian High Prandtl Number Fluids from Vertical and Inclined Plates in a Fluid with a Free Surface (76-HT-46) (A) **O 103**
Yang, A. T. Application of Instantaneous Invariants to the Analysis and Synthesis of Mechanisms (76-DET-12) (A) **N 98**
Yang, H. T. Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) (A) **S 101**
Yang, K. T. An Experimental Study of Natural Convection Mass Transfer Along a Vertical Plate with Surface Injection (76-HT-14) (A) **O 99**
Yang, R. T. M. Determination of the Dynamic Structural Response Characteristics of a Large Diesel Engine by Means of the Low Level Impedance Method (76-DGP-9) (A) **Ag 97**
Yang, S. S. Re-analysis of Cruciform Specimen Fatigue Results by Statistical Methods (75-Pet-46) (A) **Ja 118**
Yang, T. H. Investigation of a Torsionally Flexible Freight Car (75-WA/RT-13) (A) **F 78**
Yang, T. M. Elastic-Plastic Analysis of Dissimilar Metal Welded Pipe Joint (76-PVP-17) (A) **D 99**
Yank, S. J. Hydrodesulfurized Residual Oils as Gas Turbine Fuels (75-WA/GT-8) (A) **F 81**
Yannarella, P. A. *(author)* U.S. Government Scientific and Technical Periodicals (CB) **Ag 104**
Yao, L. S. Buoyancy Cross-Flow Effects in the Boundary Layer on a Heated Horizontal Cylinder (76-HT-44) (A) **O 102**
Yao, S. C. Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) (A) **F 84**; SIMPLE-2: A Computer Code for Calculation of Steady-State Thermal Behavior of Rod Bundles with Flow Sweeping (76-HT-8) (A) **O 98**; Heat and Mass Transfer from Freely Falling Drops (75-WA/HT-37) (A) **Ap 103**
Yates, D. E. Epicyclic Gearing for Gas Turbine Main Propulsion (76-GT-24) (A) **Jl 89**
Yeager, E. Oxygen Electrocatalysts for Life Support Systems (76-ENAs-37) (A) **O 97**
Yee, H. C. Behavior of Dynamic Systems Governed by a Simple Nonlinear Difference Equation (75-WA/APM-21) (A) **Je 121**
Yeh, L. T. Analysis of Heat Transfer in Slabs with Variable Properties Subjected to Radiation and Convection (75-WA/HT-67) (A) **My 103**; Nonlinear Transient Heat Transfer in Composite Slabs (76-HT-39) (A) **O 102**
Yen, Y. C. An Analytical Study of a Coiled-Pipe Heat Sink (75-WA/HT-72) (A) **My 104**
Yeung, K. S. Analysis of Thermal Stresses and Residual Changes in Railroad Wheels Caused by Severe Drag Braking (75-WA/RT-3) (A) **F 76**
Yi, Y. J. Application of Mechanisms in Humane Trapping (76-DET-61) (A) **D 92**
Yildiz, M. Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) (A) **S 99**
Yilmaz, B. S. Heat Transfer from Water in Film Boiling to an Upper Layer of Paraffinic Hydrocarbon (76-HT-24) (A) **O 101**
Yin, K. A Dispersion Model Approach to the Preliminary Design of Adsorber Beds for Trace Contaminants (76-ENAs-34) (A) **O 96**
Ying, S.-J. Multiple Control Circuit for Electrical Unit and Automatic Control Circuit for Windmill Generator (76-DET-100) (A) **D 96**
Yip, F. C. Prediction of Frost Formation Around a Chilled Natural Gas Pipeline (75-WA/HT-88) (A) **My 106**
Yokouchi, Y. Parametric Study of the Elastic-Plastic-Creep Deformation of Thick Cylinder and Program Verification (76-PVP-43) (A) **D 102**
Yonekawa, M. High Speed Line Printer Printing Mechanism Design (76-DE-10) (A) **Ag 100**
Yoshida, T. Low- and High-Speed Cascade Tests for Air-Cooled Turbine Blades (76-GT-40) (A) **Jl 91**
Yoshimoto, K. Salt in Sea Atmosphere and its Removal for Gas Turbine (76-GT-58) (A) **Jl 93**
Yost, K. J. Trace Metal Emissions from a Scrubber Controlled Municipal Incinerator (75-WA/APC-2) (A) **Je 112**
Youens, J. W. Total Gas Containment System (75-Pet-32) (A) **Ja 116**
Young, F. *(author)* Everything You Should Know About Pension Plans (CB) **D 106**
Young, L. *(author)* Everything You Should Know About Pension Plans (CB) **D 106**
Young, W. E. Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) (A) **My 99**
Yovanovich, M. M. A Physical Approach to the Finite Difference Solution of the Conduction Equation Orthogonal Curvilinear Coordinates (75-WA/HT-94) (A) **My 107**
Yu, W. S. High Efficiency Power Conversion Cycles for Central Station and Peaking Power Plants (75-WA/Ener-2) (A) **Mr 96**
Yuen, W. W. A New Differential Formulation of Radiative Transfer and Its Application to the One-Dimensional Problem (76-HT-49) (A) **O 103**
Yukitoshi, T. Low-Alloy High-Strength Steel for Boiler Tubes (Low-9Cr-2Mo) (75-WA/PVP-2) (A) **Ap 97**

Z

Zabukovec, C. Frequencies and Mode Shapes in Jet Engines (76-DET-89) (A) **D 95**
Zahalak, G. I. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) (A) **S 99**
Zahavi, E. Improving the Design Engineering Curriculum **Ja 14**
Zahradnik, R. L. Overview of the Government's Programs in Coal Conversion, Research and Development (76-PVP-16) (A) **D 99**
Zamma, J. Data-Based Computer System for Pressure Vessel Design (76-PVP-63) (A) **D 104**
Zamrik, S. Y. The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) (A) **Je 112**; The Effect of Stress Ratio and Fatigue Crack Growth in a Biaxial Stress Field (76-PVP-37) (A) **D 101**
Zara, J. A. Component Mode Analysis of the Harpoon Missile, a Comparison of Analytical and Test Results (75-WA/Aero-6) (A) **My 98**
Zaretsky, E. V. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) (A) **Ja 121**; Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 x 10^6 DN (76-LubS-16) (A) **S 97**; A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) (A) **Ja 121**; Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) (A) **Ja 121**
Zemanick, P. P. Structural Reliability Assessment of Nuclear Piping Under Worst Case Loading (76-PVP-21) (A) **D 99**
Zemansky, G. M. Dissecting the Alaskan Connection (C) **Mr 43**
Zerlauth, F. Type 3—Sulzer's New 5-MWe Gas Turbine (76-GT-33) (A) **Jl 90**

Zero Risk
"Sincere Ignorance" Compounds Energy Crisis, "Engine Men" Hear **Je 92**

Zetlmeisl, M. J. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) (A) **My 100**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) (A) **My 99**

Zhilnikov, E. P. An Investigation in the Field of Elastohydrodynamics (76-LubS-4) (A) **S 96**

Zilly, R. G. *(editor)* Handbook of Environmental Civil Engineering (CB) **F 88**

Zinc-Chlorine Battery Systems
Zinc-Chlorine Utility Battery (BTR) **Je 63**

Zinn, C. D. OILSIM-A Simulation Model for Evaluation of Alternative Bidding Procedures (75-WA/Pet-5) (A) **My 95**

Zoldak, R. The Control of Pollutant Emissions from Package Boilers (75-WA/Fu-4) (A) **My 94**

Zorzi, E. S. Finite Element Simulation of Rotor-Bearing Systems With Internal Damping (76-GT-89) (A) **Jl 96**

Zuber, N. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) (A) **Ap 100**

Zweig, J. E. Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) (A) **Ja 120**

Zwick, J. W. Design of Optimum Acoustic Treatment for Rectangular Ducts with Flow (76-GT-113) (A) **Ag 91**

Index to

TRANSACTIONS OF THE ASME

Volume 98, 1976

(Published Quarterly in Nine Journals)

Code	Journal of	Series	Published	Pages
AM	Applied Mechanics	E	March	1-191
			June	192-384
			September	385-528
			December	529-704
DS	Dynamic Systems, Measurement, and Control	G	March	1-108
			June	109-212
			September	213-356
			December	357-452
F	Fluids Engineering	I	March	1-140
			June	141-336
			September	337-588
			December	589-784
HT	Heat Transfer	C	February	1-152
			May	153-344
			August	345-536
			November	537-688
I	Engineering for Industry	B	February	1-384
			May	385-736
			August	737-1120
			November	1121-1376
L	Lubrication Technology	F	January	1-192
			April	193-352
			July	353-480
			October	481-636
MT	Materials Technology	H	January	1-96
			April	97-192
			July	193-288
			October	289-384
P	Engineering for Power	A	January	1-136
			April	137-296
			July	297-424
			October	425-560
PVT	Pressure Vessel Technology	J	February	1-96
			May	97-188
			August	189-260
			November	261-328

(AC)	Author's Closure	(D)	Discussion	(FO)	Foreign Overview
(Ad)	Addendum	(DDM)	Design Data and Methods	(FR)	Foreign Report
(AH)	Articles on History	(EB)	Educational Brief	(LR)	Lubrication Review
(BN)	Brief Note	(Ed)	Editorial	(Op)	Opinion
(BR)	Book Review	(Er)	Erratum	(TB)	Technical Brief
(C)	Comment	(F)	Forum		

A

Abbas, B. A. H. Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**

Abdel-Wahed, R. M. Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**

Abrasive Cut-off Operation
The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**

Abrasive Impact Wear
Abrasive Impact Wear of Type (75-Lub-28) **L 330**; (D) (AC) **L 334**

Abrupt Enlargements
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**

Absorption
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Abu-Akeel, A. K. Estimation of Cumulative Fatigue Damage Under Random Loading (75-DE-E) **I 348**

Accelerated Diffusion Bonding
Accelerated Diffusion Bonding Using Induced Forces (75-GT-36) **P 65**

Accelerating Liquids
Small Bubble Motion in an Accelerating Liquid (76-WA/APM-5) **AM 399**

Acceleration
Measurement of Angular Acceleration of a Rigid Body Using Linear Accelerometers (D) **AM 377**; (AC) **AM 378**
Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Acosta, A. J. The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**; Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe (TB) **F 562**

Acoustic Control
Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) **F 476**

Acoustic Emission Signals
On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) **PVT 199**

Acoustic Fluids
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) **AM 39**

Acoustic Measurements
The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**

Acoustic Medium
The Dynamic Response of an Elastic Shell of Revolution Submerged in an Acoustical Medium (BN) **AM 514**
The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**

Acoustical Resonances
Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**

Acrylic Plastic Hulls
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) **I 537**

Acrylic Plastic Windows
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Achenbach, J. D. *(reviewer)* Encyclopedia of Physics (BR) **AM 382**

Active Site Density
Active Sites in Boiling (76-HT-JJJ) **HT 401**

Adams, G. G. The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**

Adams, N. J. I. An Examination of a Proposed Method for Evaluating Nonlinear Effects in Fracture Assessment (75-PVP-33) **PVT 40**

Adams, T. N. Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**

Adaptive Control
Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**
Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**

Adenubi, S. O. Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**

Adhesive Joints
Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**

Adi Murthy, N. K. Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**

Adiabatic Faces
A New Look at the Superposition of Boundary Conditions in

the Evaluation of Temperature Distribution in a Finite Rectangular Plate With Adiabatic Faces at Steady State (TN) **HT 527**

Adiabatic Wall Effectiveness

Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**

Aerial Cable Facilities

Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Aero Engine Design

Some Future Trends in Aero Engine Design for Subsonic Transport Aircraft (75-GT-2) **P 281**

Aeroacoustics

"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustic Instrumentation" (BR) **DS 108**

Aerodynamics

Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) **P 450**; (D) (AC) **P 456**

Numerical Computation of Nonstationary Aerodynamics of of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**

Aeroelasticity

Aeroelasticity of Plates and Shells (BR) **AM 382**

Aerosol Motion

Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**

Aerosol Systems

Mean Diameters in Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**

Afify, E. M. Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**

Aggregates

Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**

Aggressive Atmospheres

Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**

Ahmed, H. U. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**

Aiba, S. An Experimental Investigation of Heat Transfer Around A Tube in A Bank (76-HT-AAA) **HT 503**

Air

Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342** (D) **F 351**; (AC) **F 352**

Air Compressors

Performance of Hydraulic Gas Compressors (76-FE-5) **F 645**; (D) **F 652, 653**; (AC) **F 653**

Air Flow

The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**

Air Jets

The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**

Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**

Air Layers

Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**

Air Pollutant Emissions

The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Air Pollution

Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Air-Side Transfer

Experiments on a Three-Row Fin and Tube Heat Exchanger (TN) **HT 520**

Air Tables

Steam and Air Tables in SI Units (BR) **DS 108**

Air-Water Mixtures

Vertically Downward Two-Phase Slug Flow **F 715**

Airblast Fuel Atomizer

Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**

Air-Cooled Turbine Tests

Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Aircraft

Some Future Trends in Aero Engine Design for Subsonic Transport Aircraft (75-GT-2) **P 281**

Aircraft Engine Application

Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Aircraft Engines

Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10^6 DN (76-LubS-16) **L 580**

Experimental Investigation of a New Concept of Fuel Prevaporization (75-GT-6) **P 305**

Missile Firing Tests at Stationary Targets in Support of Blade Containment (75-GT-47) **P 159**

Aircraft Parameter Identification

Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**

Airfoil Cascades

Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**

Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion With Applications to Harmonic Oscillation (D) (AC) **F 778**

Airfoils

A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**

Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**

Antunes, F. F. Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (D) **F 679**; (AC) **F 680**

Akeju, T. A. I. Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure (BN) **AM 517**

Akgerman, N. Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Akin, L. S. Application of EHD Oil Film Theory to Industrial Gear Drives (D) (AC) **I 633**; Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (D) **I 641**; (AC) **I 643**

Aksogan, O. The Interaction of Collinear Arrays of Griffith Cracks on Two Radial Lines (75-DET-124) **I 1086**

Aldrich, C. A. Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**

Alekseev, N. M. On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**

Alexander, J. M. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (D) **I 1375**

Algorithms

An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**

Allaire, P. E. Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**

Allen, C. W. A Simplified Model for the Elastohydrodynamic Traction Between Rollers (75-Lub-6) **L 357**; (D) **F 361**

Allen, R. R. Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**

Allen, R. W. Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**

Allen, T. T. Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**

Alloys

Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**

Altan, T. Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**; Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Altintas, S. Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**

Aluminum

High-Temperature Corrosion in Gas Turbines and Steam Boilers by Fuel Impurities—Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

A Parametric Approach to Cyclic Creep (76-APM-E) **AM 28**

Aluminum Alloys

Initial Crack Extension in Two Intermediate-Strength Aluminum Alloys (76-Mat-D) **MT 152**

On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**

Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Aluminum Beams

Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Aluminum Blanks

Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) **MT 337**

Aluminum Oxide

An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) **I 189**

Alwar, R. S. Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**

Amano, M. Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**; Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

American Society of Mechanical Engineers

ASME Catalog of Motion Pictures of Research Data in Fluid Mechanics and Heat Transfer **F 151**

Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**

Round Three: Industrial Participation in the ACD (F) **DS 236**

Analytical Formulations

On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**

Analytical Models

Analytical Model for Guideway Surface Roughness **DS 425**

Anderson, C. A. An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**

Anderson, J. C. Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**

Anderson, N. E. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (D) **L 298**

Anderson, W. J. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**; *(contributor)* List of Theses Topics in Tribology—II: Rolling Element Bearings (76-Lub-G) **L 397**

Angular Acceleration

Measurement of Angular Acceleration of a Rigid Body Using Linear Accelerometers (D) **AM 377**; (AC) **AM 378**

Angular Momentum

Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**

Angular Momentum Fluctuations

Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**

Angularity

WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**

Animation

Mechanism Design Using Animation (76-DET-54) **I 1324**

Anisotropic Beams

Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**

Anisotropic Elasticity

Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**

Anisotropic Shell Structures

Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**

Anisotropic Solids

Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**

Anisotropy

On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**

Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) **AM 124**

Annand, R. R. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A

Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

Annular Cascades
Spatial Supersonic Flow Through Annular Cascades (75-GT-113) **P 274**

Annular Diffusers
Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**; (D) (AC) **F 585**

Annular Disks
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **L 214**; (D) (AC) **L 222**

Annular Ducts
Decaying Annular Swirl Flow With Inlet Solid Body Rotation (75-FE-14) **F 33**

Annular Elastic Plates
Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**

Annular Flow
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**

Annular Rollers
An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) **L 538**; (D) **L 543, 544**; (AC) **L 546**

Annuli
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**

Annulus
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**

Anodic Dissolution
Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) **I 360**

Ansari, J. S. Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**

Antidive Suspension Systems
The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**

Antiplane Impulse Response
On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) **AM 300**

Antiplane Shear Loads
Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) **AM 625**

Antiquity
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**

Aortic Valves
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Statistical Analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**

Apblett, W. R. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**

Apex
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**

Aquatic Ecosystems
Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

Aqueous Calcium
Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**

Arbitrary Contour
Laminar Free Convection Over Two-Dimensional and Axisymmetric Bodies of Arbitrary Contour (Ad) **HT 344**

Arbitrary Geometry
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (TB) **F 320**

Arbitrary Quadratic Midsurfaces
The Fundamental Solution for a Shallow Shell With an Arbitrary Quadratic Midsurface (76-APM-V) **AM 286**

Ardayfio, D. Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**; Vibration of an Asymmetrically Mounted Rotor With Gyroscopic Effects (75-DET-58) **I 327**

Argon, A. S. Formation of Cavities From Nondeformable Second-Phase Particles in Low Temperature Ductile Fracture **MT 60**

Ariga, I. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Arndt, R. E. A. Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**

Arnold, J. N. Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**

Arnold, J. S. The Acoustically Excited Flame (D) **P 157**; (AC) **P 158**

Arnold, P. C. Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**

Ash Chemistry
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**

Ash Fusion
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**

Ashley, H. *(reviewer)* Aeroelasticity of Plates and Shells (BR) **AM 382**

Asnani, N. T. Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Aspect Ratios
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**
The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**
Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**

As-Rolled Steels
Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**

Assembly Runout
Minimizing Assembly Runout in Turbo-machines Made With Curvic® Couplings (75-GT-43) **P 37**

Astill, K. N. An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**; Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**

Asymmetric Heating
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**

Asymmetric Loading
Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**

Asymmetric Rotors
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**

Asymmetrical Couplers
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**

Asymmetrical Wakes
Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**

Asymptotic Analysis
Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**

Asymptotic Ignition
An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Asymptotic Methods
Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**
Asymptotic Wave Theory (BR) **AM 701**

Athermal Glide Process
A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**

Atherosclerosis
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**

Atmospheric Conditions
Theoretically Estimating the Performance of Gas Turbines Under Varying Atmospheric Conditions (75-GT-115) **P 69**; (Er) **P 385**

Atsumi, A. Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**

Attenuation
Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**

Attenuation Factors
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

Attritious Wear
Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Auerbach, J. M. Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**

Auger Electron Spectroscope
Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Augmentation
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**

Ausforged Gears
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**

Ausherman, V. K. Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**

Auslander, D. M. Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**

Austenitic Stainless Steels
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) **PVT 166**
The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**
Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**
Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**
Tensile Properties of Thermally Exposed Type 304 Stainless Steel (76-Mat-W) **MT 357**

Automated Transportation Networks
Scheduling Delays in Synchronous Transportation Networks **DS 173**

Automatic Control
Emergency Control of Vehicle Platoons: System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**

Automatic Depth Control Systems
Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**
Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**

Automobiles
On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**

Autoparametric Coupling
Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**

Autopilot Development
A Historical Review of Autopilot Development, Research, and Theory in Germany (AH) **DS 215**

Auto-Regressive Models
The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Au-Yang, M. K. Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (76-WA/APM-3) **AM 480**

Avitzur, B. Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**; The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**; Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**; A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (D) **L 431**; (AC) **L 432**

Avula, X. J. R. Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**; Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**

Axial Compressor Blading
A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (75-GT-34) **P 229**; (D) **P 238, 239**; (AC) **P 239**

Axial Compressors
Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**

Axial Flow
Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356**; (D) **P 363**; (AC) **P 364**

Axial Flow Compressors
Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) **P 411**
Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model (75-GT-9) **P 190**; (D) **P 212, 213**; (AC) **P 216**; Part II: Experimental Results and Comparison With Theory (75-GT-10) **P 199**; (D) **P 212–215**; (AC) **P 216**

Axial Flow Machines
A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**

Axial Flow Turbine Disks
Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**

Axial Flow Turbomachinery
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) **F 163**; (D) (AC) **F 172**
Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**

Axial Loads
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**

Axial Programmed Loading
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**

Axial Stress
Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**

Axial Suction
Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**

Axial Symmetric Contact
On the Axial Symmetric Contact Problem Involving Elastic Hollow Spheres (Er) **L 56**

Axial Turbomachine Discharge
Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (D) (AC) **F 585**

Axial Turbomachinery
Technology Status for Blade Flutter in Axial Turbomachinery (Op) **F 337**

Axial Turbulent Flow
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**

Axisymmetric Bodies
Laminar Free Convection Over Two-Dimensional and Axisymmetric Bodies of Arbitrary Contour (Ad) **HT 344**

Axisymmetric Contraction Shapes
Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**

Axisymmetric Contractions
Comprehensive Design of Axisymmetric Wind Tunnel Contractions (D) **F 131**; (AC) **F 132**
Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**; (D) **F 776**; (AC) **F 777**

Axisymmetric Impact
Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Axisymmetric Potential Flow
Axisymmetric Potential Flow Over Two Spheres in Contact (D) **AM 373**; (AC) **AM 374**

Axisymmetric Response
Modal Coefficients for the Axisymmetric Response of Thin Circular Plates (BN) **AM 511**

Axisymmetric Thermal Stresses
Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**

Axisymmetric Torsion
Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**

Axisymmetrical Vibrations
Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**

Aziz, A. Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**; A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**

B

Bache, T. C. A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**

Bachrach, B. I. A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) **AM 97**

Backfill
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**; (D) **PVT 323**; (AC) **PVT 324**

Backup Supports
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**

Backward-Forward Extrusion
Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**

Badgley, R. H. Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**; Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Bailey, C. D. Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

Bailey, J. A. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (D) **I 1199**; (AC) **I 1200**; Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**

Bailey, J. R. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**; Spinning Frame Noise Sources (75-Tex-7) **I 840**

Bajura, R. A. Flow Distribution Manifolds (76-FE-7) **F 654**; (D) **F 665**; (AC) **F 666**

Bala Krishna, M. Analytical Model for Guideway Surface Roughness **DS 425**

Balancing
Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**

Balje, O. E. Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 399**; (AC) **F 401**

Ball Bearings
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**
Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**
Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**
Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**

Ball Thrust Bearings
The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**

Ball Transmission Joints
On the Theory of the Calculation of the Constant Velocity Ball Transmission Joints (75-DE-H) **I 852**

Balloon Collapse
Balloon Collapse in Ring-Spinning (75-Tex-2) **I 658**

Bamberger, E. N. Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10⁶ DN (76-LubS-16) **L 580**; A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**; Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**

Bammert, K. Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**; A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbo-machinery Passage (D) **P 144**; (AC) **P 146**; Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model; Part II: Experimental Results and Compression with Theory (D) **P 212, 213**; (AC) **P 216**

Balmer, R. T. An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**

Band Absorption
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Banerjee, B. N. An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**

Banerjee, M. M. Note on the Large Deflections of Irregular Shaped Plates by the Method of Conformal Mapping (BN) **AM 356**

Barash, M. M. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **I 1200**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**

Barker, C. R. Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**

Barker, R. L. Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**

Bar-Lev, M. Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**

Barna, P. S. An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (D) **F 180**; (AC) **F 181**

Barr, A. D. S. A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**

Barraud, A. Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

Barriers
Scattering of Water Waves by a Pair of Semi-Infinite Barriers (D) (AC) **AM 378**

Bars
Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**
Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**
Formulation of the Eigenvalue Problem for an Unconstrained Circular Bar (BN) **AM 166**

Bartelt, K. W. Decaying Annular Swirl Flow With Inlet Solid Body Rotation (75-FE-14) **F 33**

Barth, E. W. Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

Bartholomew, E. L. Metal Flow in Two-Die Swaging (75-WA/Prod-23) **I 1121**

Bartsch, H.-J. *(author)* Handbook of Mathematical Formulas (BR) **L 349**

Bartz, W. J. Application of EHD Oil Film Theory to Industrial Gear Drives (D) **I 631**; (AC) **I 633**; Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Baruch, M. On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**

Bass, B. R. The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**

Bassett, C. E., Jr. Laminar Compressible Flow Between Rotating Disks (D) **F 388**; (AC) **F 389**

Battle, J. L. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**

Baumgartner, H. R. The Performance of a High-Speed

Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 558**; (AC) **L 563**

Bauschinger Effects

Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) **MT 264**

Bayer, R. G. Abrasive Impact Wear of Type (75-Lub-28) **L 330**; (D) (AC) **L 334**

Baylac, G. Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**; Guide Vane Vibrations Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Prototype (75-DET-61) **I 956**

Bayne, B. T. Performance Development of the Gem Turboshaft Engine (75-GT-28) **P 114**

Baz, A. Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**; Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**

Beam Boundary Conditions

Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**

Beam Column

A Bound for the Deflection of a Beam-Column (BN) **AM 181**

Beam Elements

Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) **MT 264**

Beam Lengths

Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**

Beam-Like Structures

Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**

Beams

Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**

Design Analysis of a Snap-Action Mechanism (76-DE-35) **I 1188**

On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**

Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**

Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**

Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**

Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**

Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

The Inelastic Large Deformation of Beams (BN) **AM 689**

Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**

Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**

Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**

Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**

Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**

Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Bearing Dampers

Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Bearings

Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**

Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**

Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**

On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) **L 90**

Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**

Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**

Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**

Effect of Pressurization on the Vibration Isolation Capability of Squeeze Film Bearings (75-DET-70) **I 109**; (Er) **I 736**

Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**

Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**

Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10⁶ DN (76-LubS-16) **L 580**

An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**

Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) **L 206**; (D) (AC) **L 213**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**

Leakage-Free Journal Bearings (76-Lub-F) **L 441**

Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) **L 57**

A Nonlinear-PH Method of Solution for Journal Gas Bearings (76-Lub-K) **L 613**

An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**

Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**

The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**

Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**

Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**

A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings (TB) **L 187**

Short Bearing Analysis Applied to Rotor Dynamics—Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**

Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (75-LubS-3) **L 66**; (D) **L 71, 72**; (AC) **L 72**

The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**

On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**

Super Laminar Flow in Bearings—A Review of the Second Leeds-Lyon Symposium, Lyons, France, September 17–19, 1975 (FR) **L 5**

Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Becker, H. A. Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (D) (AC) **F 291**

Becker, S. E. Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**

Beckwith, I. E. Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (D) **F 68**; (AC) **F 69**

Bedini, R. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**

Bednarski, S. Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**

Beerbower, A. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (D) **L 315**; (AC) **L 317**; (reviewer) Films on Solid Surfaces (BR) **L 479**

Beese, J. G. The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**

Begelinger, A. On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) **L 575**; (D) (AC) **L 579**

Begg, W. S. An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-21) **I 1231**

Beglinger, V. Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Bein, M. Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**

Bejar, M. A. Balloon Collapse in Ring-Spinning (75-Tex-2) **I 658**

Beliveau, J.-G. Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**

Bellamy-Knights, P. G. A Note on Vortex Breakdown in a Cylindrical Tube (TB) **F 322**

Bellomo, N. On the Theory of the Calculation of the Constant Velocity Ball Transmission Joints (75-DE-H) **I 852**

Bellows, G. Surface Integrity in Machining AISI 4340 Steel (D) **I 1006**; (AC) **I 1007**

Belt Wear

On Belt Wear (TB) **I 732**

Bending

Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**

Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) **I 166**

Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**

On the Theories of Ring Vibrations (BN) **AM 503**

Bending Analysis

Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**

Bending Loads

Estimation of Fatigue Limit of Steel Subjected to Bending Loads (TB) **MT 381**

Bending Moments

A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**

Bending Rigidities

Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**

Bending Stresses

Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**

Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) **I 196**

Bending Theory

Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**

Benedict, R. P. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**; Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**

Bennett, B. E. The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) **AM 39**; Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**

Benthem, J. P. On the Three-Dimensional Theory of Cracked Plates (D) (AC) **AM 374**

Ber, A. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 246**

Bergeles, G. The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**

Berger, B. S. The Dynamic Response of an Elastic Shell of Revolution Submerged in an Acoustical Medium (BN) **AM 514**; The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**

Berger, S. A. Thermal Analysis of a Fast-Moving Slab in Two Adjacent Temperature Chambers (TN) **HT 326**

Bergles, A. E. Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**; Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**

Bergstrom, R. W., Jr. Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

Berman, A. S. Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**; *(reviewer)* Theory and Application of the Boltzmann Equation (BR) **AM 521**

Berman, I. Buckling Rules for Nuclear Components—Code Case 1592 **PVT 229**; Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**

Bernardi, R. T. Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**

Berry, J. T. The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) **I 1237**

Bertels, A. W. M. Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**

Bevevino, J. W. The Tubular Exchanger Manufacturers Association and Industry **PVT 185**

Bhardwaj, N. K. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 544**; (AC) **L 546**

Bhatia, S. P. Equivalent One-Dimensional System for Analysis of Taper Leaf Springs (75-DE-O) **I 39**

Bhattacharya, A. P. Nonlinear Flexural Vibrations of Thin Shallow Translational Shells (BN) **AM 180**

Bhattacharyya, S. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**

Bhinder, F. S. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (D) (AC) **P 59**

Bianchini, A. Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**

Biederman, R. R. Metal Flow in Two-Die Swaging (75-WA/Prod-23) **I 1121**

Bilir, O. G. The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) **MT 244**

Bimetal Rods
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**; (D) **I 1375**

Binary Gas Mixtures
Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Biochemical Oxygen Demand
A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**
Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**

Biological Tissues
Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (75-HT-PP) **HT 514**

Biology
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**

Biomechanical Depth Control
Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**

Bird Caging
The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**

Birkoff, G. *(editor)* A Source Book in Classical Analysis (BR) **DS 448**

Biron, A. Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Mean Stress (76-Mat-M) **MT 249**

Biswas, P. Thermal Buckling of Orthotropic Plates (BN) **AM 361**

Biswas, S. Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**

Biswas, S. K. Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**

Bivariate Time Series
Identification of Papermaking Process From Closed Loop Data by Bivariate Time Series Analysis (76-Aut-MM) **DS 291**

Biwedges
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**

Bjorkman, G. S., Jr. Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**

Black, H. F. The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**

Black, W. Z. Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**

Blackburn, L. D. Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**

Blade Containment Design
Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**

Blade Flutter
Technology Status for Blade Flutter in Axial Turbomachinery (Op) **F 337**

Blade Forging
Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Blade Loss
A Note on Blade Loss Dynamics of Rotor-Dearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**

Blade Loss Dynamics
A Note on Blade Loss Dynamics of Rotor-Bearing Systems (Er) **I 1329**

Blade Mistuning
Vibration Modes of Mistuned Bladed Disks (75-GT-114) **P 349**

Blade Setting
The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**

Blade Tip Contact
Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**

Blades
Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

Blast Waves
Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics (TB) **F 580**

Blevins, R. D. Fluid Forces Induced by Vortex Shedding (75-FE-10) **F 19**; (D) **F 24, 25**; (AC) **F 25**

Block Diagrams
An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**

Blood Flow
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**

Blood Perfusion
Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (76-HT-PP) **HT 514**

Blotter, P. T. The Formation and Properties of Machining Birrs (75-Prod-J) **I 66**

Blower Noise
Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Prototype (75-DET-61) **I 956**

Bluff Jets
Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**

Bluff Structures
Fluid Forces Induced by Vortex Shedding (75-FE-10) **F 19**; (D) **F 24, 25**; (AC) **F 25**

Blunt Bodies
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**

Blunt Leading Edge
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**

Bobrowsky, A. R. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (D) **I 1375**

Bock, F. C. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**

Bode, H. W. The Oldenburger Award Response **DS 126**

Bodensieck, E. J. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (D) **L 275**; (AC) **L 276**

Bodies of Revolution
Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Bodner, S. R. An Incremental Criterion for Time-Dependent Failure of Materials (76-Mat-H) **MT 140**

Body Temperature
The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Bogy, D. B. The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**

Boiler Tubes
Low-Alloy High-Strength Steel for Boiler Tubes (Low C-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**

Boilers
The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Boiling
Active Sites in Boiling (76-HT-JJJ) **HT 401**
Nucleation Site Activation in Saturated Boiling (D) **HT 340**; (AC) **HT 341**
Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**

Boiling Channels
An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**

Boiling Water Reactors
Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Bolleter, U. Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Bolt Head Design
Criteria for Evaluating Bolt Head Design (76-DE-30) **I 1179**

Bolt Preload
On Optimal Bolt Preload (75-WA/DE-14) **I 779**

Bolt, S. E. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**

Bolted Connections
Determination of Joint Stiffness in Bolted Connections (75-DE-J) **I 858**
The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**

Bolts
Development of Design Charts for Bolts Preloaded up to the Plastic Range (75-DE-B) **I 849**

Boltzmann Equation
Theory and Application of the Boltzmann Equation (BR) **AM 521**

Bond Graphs
Bond Graphs for Nonholonomic Dynamic Systems (76-WA/Aut-3) **DS 361**

The Properties of Bond Graph Junction Structures (D) **DS 209**; (AC) **DS 210**

Boness, R. J. Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**

Boni, A. A. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Bonne, U. The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (D) **P 433**; (AC) **P 434**

Bonnin, J. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (D) **F 95**; (AC) **F 96**

Book Reviews

"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" **DS 108**

Aeroelasticity of Plates and Shells **AM 382**

Analysis of Turbulent Boundary Layers **AM 189**

Asymptotic Wave Theory **AM 701**

Composite Materials and Their Use in Structures **MT 96**

Continuum Mechanics of Viscoelastic Liquids **AM 521**

Creep, Viscoelasticity and Creep Fracture in Solids **MT 191**

Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures **AM 523**

Elements of the Mechanical Behavior of Solids **AM 383**

Encyclopedia of Physics 4—Mechanics of Solids **AM 382**

Films on Solid Surfaces **L 479**

Fluid Power Servomechanisms **DS 204**

Formulas for Stress and Strain **AM 522**

Handbook of Mathematical Formulas **L 349**

High-Alumina Cement Concrete **MT 191**

Holographic Nondestructive Testing **AM 523**

An Introduction to the Elastic Stability of Structures **AM 383**

An Introduction to Engineering Systems **DS 352**

Linear and Nonlinear Waves **AM 190**

Measurement Systems, Application and Design, Revised Edition **DS 204**

The Mechanics of the Contact Between Deformable Bodies **AM 701**

Metal Fatigue **MT 96**

Nonlinear Theory of Elastic Stability **AM 521**

Optical Holography **AM 523**

The Origins of Feedback Control **DS 204**

Perturbation Method in Fluid Mechanics **AM 189**

Photoplasticity **AM 383**

Principles and Applications of Tribology **L 635**

A Rational Finite Element Basis **L 635**

Review of Continuum Physics **AM 384**

Small Elastic Deformations of Thin Shells **AM 702**

A Source Book in Classical Analysis **DS 448**

Stability of Motion: A Collection of Early Scientific Papers by Routh, Clifford, Sturm and Böcker **DS 205**

Statistical Fluid Mechanics, Vol. II **AM 521**

Steam and Air Tables in SI Units **DS 108**

Table of Integrals, Series, and Products **L 479**

Theory and Application of the Boltzmann Equation **AM 521**

Three-Dimensional Crack Problems **AM 522**

Treatise on Materials Science and Technology **AM 384**

Vibration of Solids and Structures Under Moving Loads **AM 524**

Booker, J. F. Application of Finite Element Methods to Lubrication: An Engineering Approach (Er) **L 39**; Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**; Dynamic Analysis of Elastohydrodynamic Squeeze Films (D) **L 407**; (AC) **L 408**; Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (D) (AC) **L 205**; *(reviewer)* Principles and Applications of Tribology (BR) **L 635**

Booms

Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**

Boothroyd, G. Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) **I 217**; Review of Materials Processing Literature 1971–72—Part 1: Material Removal Practice **I 1**

Boring Processes

The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**

Boron Nitride

Thermal Contact Conductance of Lead Ferrite and Boron Nitride (TN) **HT 331**

Bosma, R. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**

Botman, M. Epicyclic Gear Vibrations (75-DET-14) **I 811**; Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) **P 393**; (D) **P 399**; (AC) **P 400**

Bott, T. R. Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**

Boundary Conditions

The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**

The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**

Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

A New Look at the Superposition of Boundary Conditions in the Evaluation of Temperature Distributions in a Finite Rectangular Plate With Adiabatic faces at Steady State (TN) **HT 527**

Boundary Geometries

Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**

Boundary Layer Analysis

Application of a General Boundary Layer Analysis to Turbulent Boundary Layers Subjected to Strong Favorable Pressure Gradients (D) **F 129**; (AC) **F 130**

Boundary Layer Equations

An Approximate Method for the Solution of a Class of Nonsimilar Laminar Boundary Layer Equations (75-FE-28) **F 292**

Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**

Boundary Layer Flow

A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) **F 568**; (D) **F 570, 571**; (AC) **F 572**

Boundary Layers

Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**

Analysis of Turbulent Boundary Layers (BR) **AM 189**

The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**

Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**

The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**

Measured $\overline{uw}$ Stress Gradients in a Three-Dimensional Turbulent Boundary Layer (TB) **F 768**

Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (A) **F 363**

A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**

A Theoretical Study of Thermally Developing Fully Turbulent Boundary Layer Flow (TN) **HT 334**

Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**

Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**

The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**

Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**

Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**; (D) **AM 699**

Boundary-Layer Growth

Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**

Boundary-Layer Solutions

An Experimental Verification of Boundary-Layer Solutions of Karman's Equations of Plates (BN) **AM 168**

Bounding Theorems

Work Bounding Functions for Plastic Materials (76-APM-HH) **AM 434**

Bounds

A Bound for the Deflection of a Beam-Column (BN) **AM 181**

Bowley, W. W. Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (76-FE-8) **F 667**; (D) (AC) **F 673**

Bowman, H. F. A Nonlinear Dynamic Model of a Once-Through Subcritical Steam Generator (76-Aut-M) **DS 332**

Boyd, W. K. Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

Bradley, M. R. The Fundamental Solution for a Shallow Shell With an Arbitrary Quadratic Midsurface (76-APM-V) **AM 286**; Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**

Bradley, W. B. The Effect of Casing Wear on the Burst Strength of Casing—Part 1: Joint Leakage (75-Pet-11) **I 681**; Part 2: Statistical Burst Strength of Worn and Unworn Casing Strings (75-Pet-27) **I 686**

Bradshaw, A. Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**

Bradshaw, P. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (D) **F 351**; (AC) **F 352**; Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (D) (AC) **F 69**; Effects of System Rotation on the Performance of Two-Dimensional Diffusers (D) (AC) **F 429**; Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (D) (AC) **P 227**

Brake Shoes

Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**

Branch Problems

Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 175**

Brandmaier, H. E. Steam Flow Through Safety Valve Vent Pipes (75-WA/PE-23) **F 199**; (D) **F 206**; (AC) **F 207**

Bratt, H. M. The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**

Breig, W. F. V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**

Brennen, C. The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**; Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (D) (AC) **F 467**

Brief Notes

Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat **AM 515**

An Approximate Periodic Solution of a Weakly Nonlinear Wave Equation **AM 504**

Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure **AM 517**

Bending of a Curved Bar of Micropolar Elastic Material **AM 502**

A Bound for the Deflection of a Beam-Column **AM 181**

The Dynamic Response of an Elastic Shell of Revolution Submerged in an Acoustical Medium **AM 514**

Dynamically Coupled Motion of Surface-Fluid-Shell System **AM 507**

Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch **AM 506**

An Experimental Verification of Boundary-Layer Solutions of Karman's Equations of Plates **AM 168**

Finite Deflections of a Circular Plate Sealing an Incompressible Liquid **AM 694**

Finite Rotations and Associated Displacement Vectors **AM 698**

Formulation of the Eigenvalue Problem for an Unconstrained Circular Bar **AM 166**

A General Principle in Dynamic Response of Fluid-Structure

Interaction **AM 697**
On the Heating of Insulated Bodies in Linear Thermoelasticity **AM 169**
Incompressible Laminar Entrance Flow in a Circular Sector Duct **AM 357**
The Inelastic Large Deformation of Beams **AM 689**
The Influence of Constitutive Relationships on Stress-Redistribution Times in Creeping Structures **AM 173**
Interface Separation in a Frictionless Contact Problem for an Elastic Layer **AM 175**
Irrotational Flow About Two Touching Spheres **AM 365**
Laminar Flow in the Entrance Region of Parallel Plates **AM 186**
Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass **AM 363**
Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation **AM 690**
Lower Bound for Fundamental Torsional Frequencies **AM 510**
MHD Pipe Flow With Variable Wall Porosity **AM 172**
Minimum-Weight Design of Vibrating Elastic Structures With Dynamic Deflection Constraint **AM 178**
Modal Coefficients for the Axisymmetric Response of Thin Circular Plates **AM 511**
Motion of a Hollow Cylinder Containing a Small Oscillator **AM 508**
Nonlinear Flexural Vibrations of Thin Shallow Translational Shells **AM 180**
Nonlinear Vibrations of Thin Cylinders **AM 370**
Note on the Large Deflections of Irregular Shaped Plates by the Method of Conformal Mapping **AM 356**
Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load **AM 188**
Potential Sluice Gate Flow With Generalized Boundaries **AM 368**
Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls **AM 367**
A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters **AM 184**
A Simple Model of Submarine Hoses in Single Point Moorings **AM 170**
On the Specification of Eigenvalues in Vibratory Systems **AM 359**
Spectral Representation of Wave Propagation in Thermoviscoelastic Medium I **AM 177**
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes **AM 695**
Tangential Loading of Two Bodies in Contact **AM 513**
Thermal Buckling of Orthotropic Plates **AM 361**
On the Theories of Ring Vibrations **AM 503**
Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass **AM 366**
The Vibration of an Elliptic Ring Membrane **AM 692**
Wave Propagation in Finite Rods of Voigt Material **AM 182**

Briggs, D. G. Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**

Brittle Fracture
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) **I 206**
Grinding of Glass: Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Brittle Materials
An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**

Brittle Plates
Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**

Broadband Noise
Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**

Broadband Noise Excitation
Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**

Broad-Band Vibration Spectra
On Using the ISO Standard To Evaluate the Ride Quality of Broad-Band Vibration Spectra in Transportation Vehicles (TB) **DS 440**

Brock, J. E. Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**; Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) **AM 345**

Brower, W. B., Jr. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 583**; (AC) **F 585**

Brown, F. T. Bond Graphs for Nonholonomic Dynamic Systems (76-WA/Aut-3) **DS 361**; Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

Brown, K. W. Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**

Brown, M. L. Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**; Optimization of a Ribbed Table for Minimum Weight and Minimum Deflection (75-DE-K) **I 30**

Browne, A. L. Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**

Brumfield, L. K. On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**

Brundett, E. An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (D) **F 180**; (AC) **F 181**

Brunsvold, A. R. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**

Bryers, R. W. An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**; The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) **P 517**

Bryson, J. W. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**

Bubble Mode
A Note on Vortex Breakdown in a Cylindrical Tube (TB) **F 322**

Bubble Motion
Small Bubble Motion in an Accelerating Liquid (76-WA/APM-5) **AM 399**

Bublys, R. Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (D) (AC) **F 625**

Buchberg, H. Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**

Buckens, F. Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**

Buckling
Buckling of an Elliptical Plate With Simply Supported Edge Under Uniform Compression (76-APM-AA) **AM 455**
Buckling Rules for Nuclear Components—Code Case 1592 **PVT 229**
Creep Buckling of Imperfect Columns (76-APM-10) **AM 131**
Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**
Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**
Thermal Buckling of Orthotropic Plates (BN) **AM 361**

Buckling Stresses
Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure (BN) **AM 517**

Built-Up Edge
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) **I 287**; (D) (AC) **I 735**

Bui-Quoc, T. Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Mean Stress (76-Mat-M) **MT 249**

Bunditkul, S. Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Buoy Mooring Systems
Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**

Buoyancy
Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**
Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux (TN) **HT 523**

Buoyancy Force
Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**

Buoyancy-Induced Flow
Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**

Buoyant Jets
Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Bupara, S. S. Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (D) **L 507**; (AC) **L 508**; A Simplified Model for the Elastohydrodynamic Traction Between Rollers (D) **F 361**; A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (D) **L 342**; (AC) **L 343**

Burch, D. M. Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**

Burckhardt, C. B. *(author)* Optical Holography (BR) **AM 523**

Buretta, R. J. Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**

Burmester Mechanism Synthesis
Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 176**

Burn Injury
An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**

Burney, F. A. A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**

Burnside, O. H. Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**

Burr Formation
The Formation and Properties of Machining Burrs (75-Prod-J) **I 66**

Burrows, C. R. The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**; *(author)* Fluid Power Servomechanisms (BR) **DS 204**

Burst Phenomenon
A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**

Burst Strength
The Effect of Casing Wear on the Burst Strength of Casing—Part 1: Joint Leakage (75-Pet-11) **I 681**; Part 2: Statistical Burst Strength of Worn and Unworn Casing Strings (75-Pet-27) **I 686**

Burton, R. A. Flow Development in a Parallel Plate Channel (D) **L 154**; (AC) **L 156**; An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**; Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**; Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**; Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (D) **L 284**; (AC) **L 285**

Burton, T. E. Fluid Forces Induced by Vortex Shedding (75-FE-10) **F 19**; (D) **F 24, 25**; (AC) **F 25**

Butt Welds
WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**

By-Pass Control
Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**

C

C Seals
Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (75-PVP-31) **PVT 33**; (D) **PVT 45**; (AC) **PVT 46**

Cabbie, G. M. Hot Spot Heating by Composition Shoes (D) **I 457**; (AC) **I 458**

Cable Facilities
Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Cable Forces
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**

Cable Hockling
The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**

Cable Segments
An Energy Method Determination of Large Cable Dynamics (76-APM-20) **AM 330**

Cables
Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**
Calcium Sulfate
Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**
Callan, P. C. The Challenge of Reliability in Steam Turbine Control (F) **DS 321**
Cams
Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (76-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Cantilever Beams
On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**
Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**
Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**
Cantilever Plates
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**
Cantilevers
Distribution of Shearing Stresses in an Orthotropic Cantilever (Er) **AM 524**
Capillary Tubes
Evaporation From a Capillary Tube (76-HT-NN) **HT 178**
Capitao, J. W. Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**; Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**
Carajilescov, P. Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**; (Er) **HT 508**
Carbide Size
The Relation Between Ultimate Tensile Strength and Carbide Size in Steel (75-Mat-18) **MT 173**
Carbide Tools
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 245**
Carbon Dioxide
Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**
Carbon Monoxide
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**
Carbon Phenolic Ablators
Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**
Carbon Steels
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**
Carbon Steel Forgings
An Evaluation of the Material Capabilities of Low Carbon 2¼ Cr-1 Mo Steel Forgings (76-Pet-40) **PVT 316**
Carburization
The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**
Carey, G. F. A Finite-Element Method for Through Flow Calculations in Turbomachines (D) **F 417**; (AC) **F 419**; A Variational Formulation of the Compressible Throughflow Problem (75-GT-32) **P 1**
Carlson, A. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**
Carlson, D. E. On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**
Carotid Arteries
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**
Carpenter, J. R. Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Carroll, R. J. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Carson, W. W. An Energy Method Determination of Large Cable Dynamics (76-APM-20) **AM 330**; Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**
Carter, J. E. A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) (D) **F 570**; (AC) **F 572**
Carter, P. Work Bounding Functions for Plastic Materials (76-APM-HH) **AM 434**
Cartesian Coordinates
Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (75-HT-PP) **HT 514**
Casarella, M. J. On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**
Cascade Wind Tunnel
Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**
Cascades
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**
A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**
Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356**; (D) **P 363**; (AC) **P 364**
Casing Collapse
Casing Collapse Performance (75-Pet-41) **I 1112**
Casing Wear
The Effect of Casing Wear on the Burst Strength of Casing—Part 1: Joint Leakage (75-Pet-11) **I 681**; Part 2: Statistical Burst Strength of Worn and Unworn Casing Strings (75-Pet-27) **I 686**
Casings
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
Cast Irons
Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**
Cast Steel
A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**
Castelli, V. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**; Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) **L 453**; (D) (AC) **L 462**
Catheter Probes
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Catton, I. Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**; Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**; Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**; Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**
Caughey, T. K. *(reviewer)* Asymptotic Wave Theory (BR) **AM 701**
Caves, J. L. Transient Analysis of Offshore Loading Systems (D) **I 383**; (AC) **I 384**
Cavitating Inducer
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**
Cavitation
Cavitation in Relation to the Design and Operation of Hydrodynamic Machinery (Op) **F 590**
Effect of Polymer Additives on Jet Cavitation (76-FE-A) **F 106**; (D) **F 111**; (AC) **F 112**
Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**
Inception of Cavitation From a Solid Surface (75-WA/DE-13) **I 145**
Orifice Cavitation and Its Effect on Spray Mixing **F 681**
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) **P 401**
Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**
Cavities
Active Sites in Boiling (76-HT-JJJ) **HT 401**
Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**
Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity (TN) **HT 148**
Formation of Cavities From Nondeformable Second-Phase Particles in Low Temperature Ductile Fracture **MT 60**
Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**
Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**
Cavity Flow
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Cebeci, T. *(author)* Analysis of Turbulent Boundary Layers (BR) **AM 189**
Cemented Carbide Tools
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 245**
Center-Cracked Strips
Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**
Central Receivers
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**; (Er) **P 539**
Centrifugal Compressors
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**
Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**
Centrifugal Fuel Pumps
Development of a Retracting Vane Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**
Centrifugal Impellers
Two-Dimensional Method for Calculating Separated Flow in a Centrifugal Impeller (D) **F 333**; (AC) **F 335**
Centrifugal Turbomachinery
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**
Cercignani, C. *(author)* Theory and Application of the Boltzmann Equation (BR) **AM 521**
Cess, R. D. A Simple Parameterization for the Water Vapor Emissivity (TN) **HT 676**
Chakraborty, J. Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (75-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**
Chamberlin, R. M. Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**
Chandran, K. B. An Experimental Study of Package Cushioning for the Human Head **AM 469**; (Er) **AM 702**
Chandrasekhara, D. V. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Chandrashekhar, N. Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**
Chang, C.-H. An Experimental Verification of Boundary-Layer Solutions of Karman's Equations of Plates (BN) **AM 168**
Chang, N. Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**; Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**
Chang, S. I. Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**
Channel Flow
Channel Flow Over A Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**

(D) **F 632, 633**; (AC) **F 634**

Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**

The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**

Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) **AM 13**

Symmetrical Laminar Channel Flow With Wall Suction (75-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**

A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**

Channel Junctures

The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**

Channel Walls

Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**

Channel Width

Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) **L 344**; (D) (AC) **L 347**

Channels

Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**

An Experimental and Theoretical Study of Transitional Turbulent Pulsatile Flow in a Channel (76-APM-MM) **AM 559**

Chao, B. T. Laminar Free Convection Over Two-Dimensional and Axisymmetric Bodies of Arbitrary Contour (Ad) **HT 344**

Chapman, M. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Char Depth

Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**

Charnay, G. Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**

Charpy V-Notch

A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**

Chary, S. P. Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**

Chatter

Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) **I 258**

Chatter Vibrations

In-Process Analysis of Machine Tool Structure Dynamics and Prediction of Machining Chatter (75-DET-20) **I 301**

Chawla, K. K. *(reviewer)* Composite Materials and Their Use in Structures (BR) **MT 96**

Chemical Compositions

Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Chemical Effects

Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**; Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315-317**; (AC) **L 317**

Chemical Reactions

Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**

Chen, A. T. Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Chen, C. C. Natural Convection From a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) **HT 446**

Chen, C.-M. The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

Chen, F. C. Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**

Chen, J. C. Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**

Chen, S. S. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**

Chen, S. S. H. Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) **I 166**

Chen, T. S. Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux (TN) **HT 523**; The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**; Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**

Chen, T. Y. W. A Finite-Element Method for Through Flow Calculations in Turbomachines (D) **F 417**; (AC) **F 419**

Chen, Y. The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

Chen, Y. N. Guide Vane Vibrations Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Prototype (75-DET-61) **I 956**

Cheng, H. S. The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**; Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (D) (AC) **L 228**; *(compiler)* List of Theses Topics in Tribology—II (76-Lub-G) **L 393**; *(contributor)* List of Theses Topics in Tribology—II: Thick-Film EHD Lubrication (76-Lub-G) **L 395**; Thin-Film EHD Lubrication; Metal-Working Lubrication (76-Lub-G) **L 396**; Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**

Cheng, K. C. Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**; Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**; Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**

Cheruy, A. Modeling of Enzyme Reaction Kinetics (76-Aut-EE) **DS 266**

Chester, L. B. Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**

Chiang, T. Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Childs, D. W. A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) **I 876**; A Modal Transient Simulation Model for Flexible Asymmetric Rotors (75-DET-34) **I 312**

Chin, Y. P. Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part II—Ellipticity Parameter Results (D) **L 381**; (AC) **L 382**

Chip-Removal Process

The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **I 1200**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**

Chiu, P. K. Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**

Chiu, Y. P. Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**; On the Axial Symmetric Contact Problem Involving Elastic Hollow Spheres (Er) **L 56**; Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (D) **L 71**; (AC) **L 72**

Cho, D. H. Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**; Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**

Chohan, S. M. Design Problem Solving by Functional Analysis and Creativity (75-DET-121) **I 1069**

Choked Flow

Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Choking Phenomena

Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**

Choquet, J. A. Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Mean Stress (76-Mat-M) **MT 249**

Chou, C. C. On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**; (Er) **DS 394**

Chou, P. C. In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**

Chou, T. W. *(author)* Composite Materials and Their Use in Structures (BR) **MT 96**; Point Force Solution for an Infinite Transversely Isotropic Solid (76-WA/APM-18) **AM 608**

Chou, Y. T. Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**

Chow, L. S. H. The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**; Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**

Chow, W. L. Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**

Christensen, E. Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**

Chu, H. H.-S. The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**

Chucking Methods

The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**

Chujo, Y. The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Chung, D. K. Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Chung, K. C. Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**

Chung, P. M. An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Chung, T. J. Dynamically Coupled Motion of Surface-Fluid-Shell System (BN) **AM 507**

Churchill, S. W. The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**; Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Cichocki, K. Modeling and Optimization of Economic System in Socialist Countries (76-Aut-GG) **DS 252**

Circuit Boards

Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) **I 137**

Circular Air Jets

The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**

Circular Bars

Formulation of the Eigenvalue Problem for an Unconstrained Circular Bar (BN) **AM 166**

Circular Blanks

Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) **MT 337**

Circular Conduits

The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**

Circular Cylinders

Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**

Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**

Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**

A Numerical Study of Unsteady Laminar Forced Convection From a Circular Cylinder (76-HT-FF) **HT 303**

Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**

Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**

Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**

Circular Jets

Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**

Circular Lines

Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**

Circular Plates

Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**

Modal Coefficients for the Axisymmetric Response of Thin Circular Plates (BN) **AM 511**

A Singularity Approach to Circular Plates (76-DE-28) I 1176

Circular Rings

On the Theories of Ring Vibrations (BN) **AM 503**

Circular Sector Ducts

Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**

Circular Tube Data

An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**

Circular Tubes

An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**

Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**

Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 257**

A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Civelek, M. B. Interface Separation in a Frictionless Contact Problem for an Elastic Layer (BN) **AM 175**

Clamped Ring Membranes

The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

Clamping Force

On Optimal Bolt Preload (75-WA/DE-14) **I 779**

Clark, J. C. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (D) (AC) **L 594**; The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 559**; (AC) **L 563**

Classical Analysis

Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

A Source Book in Classical Analysis (BR) **DS 448**

Claycombe, W. W. Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**

Cleaning Requirements

Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**

Clearance Ratios

Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**

Clearances

Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**

Cleary, E. N. G. Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**

Close, D. J. Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**

Closed Head Impact

An Experimental Study of Package Cushioning for the Human Head **AM 469**

Closed-Form Solutions

A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity (TN) **HT 148**

Closed Loop Control

Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**

Coal Firing

Coal Firing and Industrial Boiler Design—the Modern Approach (75-IPwr-14) **P 297**

Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

Coal Gas Burning

Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**

Coals

An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**

Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**

Coaxial Cylinders

Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (76-WA/APM-3) **AM 480**

Coaxial Jets

Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**

Cobalt Base Superalloys

Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Coder, D. W. Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (D) **F 503**; (AC) **F 504**

Coe, H. C. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 559**; (AC) **L 563**

Coe, H. H. Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Coffin, L. F., Jr. *(reviewer)* Elements of the Mechanical Behavior of Solids (BR) **AM 383**

Cohen, H. Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**

Cohen, M. J. A Nonlinear-PH Method of Solution for Journal Gas Bearings (76-Lub-K) **L 613**

Cohen, R. A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**

Colbourne, J. R. Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) **I 1296**

Cold Liquid Sprays

The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**

Cole, N. C. Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**

Coles, A. Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Collacott, R. A. Machine Life Expectation (75-DE-L) **I 862**

Colladay, R. S. Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**

Collapse Modes

A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**

Collapse Testing

Casing Collapse Performance (75-Pet-41) **I 1112**

Collection Efficiency

Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**

Collier, R. J. *(author)* Optical Holography (BR) **AM 523**

Collinear Arrays

The Interaction of Collinear Arrays of Griffith Cracks on Two Radial Lines (75-DET-124) **I 1086**

Collins, J. A. The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**

Colloidal Suspension

Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**

Columns

Creep Buckling of Imperfect Columns (76-APM-10) **AM 131**

Colwell, G. T. The Suppression of Flow Separation by Sequential Wall Jets (D) **F 453**; (AC) **F 454**

Comber Roll Speeds

The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**

Combination Resonances

Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**

Combinatorial Optimization

Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Part 2: Applications (76-DET-25) **I 1281**

Combustion

Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Combustion Noise

"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Combustor Design

Multiple Jet Correlations for Gas Turbine Engine Combustor Design (75-GT-45) **P 265**; (D) **P 272**; (AC) **P 273**

Combustors

Combustion Generated Noise in Gas Turbine Combustors (75-GT-27) **P 242**

Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**

The Vorbix Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**

Comini, G. Thermal Aspects of Cryosurgery **HT 543**

Comley, W. D. Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (D) **P 347**; (AC) **P 348**

Command Generation

Optimal Command Generation for Tracking a Class of Discontinuous Trajectories (76-Aut-R) **DS 167**

Commercial Boilers

The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Commercial Melt

Further Observations on A533-B Steel Plate Tailored for Improved Radiation Embrittlement Resistance **PVT 111**

Comninou, M. Contact Between Viscoelastic Bodies (76-WA/APM-19) **AM 630**

Complex Systems

Spectral Analysis of Complex Systems Supported at Several Elevations **PVT 162**

Complex-Shaped Ducts

An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**

Compliant Bearings

An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**

Compliant-Surface Bearings

An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**

Composite Half Planes

Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**

Composite Materials

Composite Materials and Their Use in Structures (BR) **MT 96**

A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**

Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**

Composite Rods

Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**

Composition Shoes

Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**

Compressible Flow

Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**

Compressible Fluid Streams

Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**

Compressible Fluids

An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**

Compressible Lubricants

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

Compressible Newtonian Fluids

Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**

Compressible Throughflow Problem

A Variational Formulation of the Compressible Throughflow Problem (75-GT-32) **P 1**

Compressibility

Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**

Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**

Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

Compression

Buckling of an Elliptical Plate With Simply Supported Edge

Under Uniform Compression (76-APM-AA) **AM 455**
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**

Compressor Blades
Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**
Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**

Compressor Cascades
The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**

Compressor Insulation
Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**

Compressor Reed Valves
A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**

Compressor Rotor Blades
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

Compressors
Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**
Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model (75-GT-9) **P 190**; (D) **P 212, 213**; (AC) **P 216**; Part II: Experimental Results and Comparison With Theory (75-GT-10) **P 199**; (D) **P 212–215**; (AC) **P 216**

Computation
Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

Computational Methods
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**

Computer Algorithms
An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**

Computer Control
An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**
System Stability by Improved Routh and Jury Arrays **DS 206**

Computer Design
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**

Computer Graphics
Mechanism Design Using Animation (76-DET-54) **I 1324**

Computer Numerical Control
Some Aspects of Computer Numerical Control With Reference to Interpolation (75-Prod-L) **I 883**

Computer Programs
Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

Computer Simulation
Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Computer-Aided Design
Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Computers
System Simulation by Computers (F) **DS 237**

Concentrated Contacts
Trends in Concentrated Contacts (Op) **L 481**

Concentrated Loads
Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**
Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load (BN) **AM 188**

Concentrated Mass
Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**
Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**

Concentrators
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**

Concentric Cylinders
An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**

Concentric Holes
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**

Concentric Spheres
An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**

Concrete
High-Alumina Cement Concrete (BR) **MT 191**

Condensate Film
Unsteady and Two-Dimensional Flow of a Condensate Film (TN) **HT 313**

Concrete Reactor Vessels
Codes for Concrete Reactor Vessels and Containments **PVT 326**

Condensation
Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**

Conduction
Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**
The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**

Conduction-Controlled Rewetting
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**

Conduction Phase Changes
Effect of Density Change on Multidimensional Conduction Phase Change **HT 550**

Conduits
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**

Cones
The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) **AM 59**

Configuration Factors
Determination of Configuration Factors of Irregular Shape (TN) **HT 311**

Confined Fluids
Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Confinement
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Conformal Mapping
Note on the Large Deflections of Irregular Shaped Plates by the Method Conformal Mapping (BN) **AM 356**

Conical Annulus
A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 766**

Conical Diffusers
Flow Control in Wide-Angled Conical Diffusers **F 728**
Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

Conical Frustum Windows
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Conical Shells
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**

Conical Surfaces
The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**

Conry, T. F. Optimal Selection of Pumps in an Hydraulic Network (75-FE-21) **F 2**

Constant Melting Point
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**

Constant Velocity
On the Theory of the Calculation of the Constant Velocity Ball Transmission Joints (75-DE-H) **I 852**

Constantinescu, V. N. Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**

Constants
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**

Constitutive Equations
A Constitutive Equation for High-Temperature Flow (D) (AC) **MT 190**
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**

Constitutive Relations
Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**
Development of Constitutive Relation for Plastic Deformation From a Dislocation Model (75-Mat-8) **MT 52**

Constitutive Relationships
Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**
The Influence of Constitutive Relationships on Stress-Redistribution Times in Creeping Structures (BN) **AM 173**

Constraint
The Practical Use of Gauss' Principle of Least Constraint (76-APM-P) **AM 491**

Contact
Tangential Loading of Two Bodies in Contact (BN) **AM 513**

Contact Fatigue Life
Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**; Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**

Contact Loading
Traction Characteristics of a MIL-L-7808 Oil **L 607**; (D) (AC) **L 612**

Contact Mechanics
On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) **L 367**; (D) **L 373**; (AC) **L 374**
The Mechanics of the Contact Between Deformable Bodies (BR) **AM 701**

Contact Pressure
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**
On Some Unbonded Contact Problems in Plane Elasticity Theory (76-APM-W) **AM 263**

Contact Stress Distributions
The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**

Contact Stresses
Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**
Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**
Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) **I 1296**

Contacting Surfaces
Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (75-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**

Contacts
Contact Between Viscoelastic Bodies (76-WA/APM-19) **AM 630**

Container Acceleration
An Experimental Study of Package Cushioning for the Human Head **AM 469**

Contaminated Lubricants
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**; Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**

Continuous Linear Systems
On the Identification of Noise Covariances in Continuous Linear Systems (76-Aut-LL) **DS 296**

Continuum Mechanics
Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**

Continuum Models
A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**
Continuum Physics
Review of Continuum Physics (BR) **AM 384**
Continuum-Slip Theory
Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**
Contraction Shapes
Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**
Contreras, W. Transient Melting of a Solid Heated by a Condensing Saturated Vapor—Case 1: Negligible Interface Curvature (Er) **HT 143**
Control Derivatives
Application o Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
Control Systems
Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**
Control Theory
The Early Development of Control Theory (AH) **DS 109**; II (AH) **DS 224**
Professor Stodola's Contribution to Control Theory (AH) **DS 119**
Controllers
Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**
Convecting Fins
Perturbation Solution for Convecting Fin With Variable Thermal Conductivity (D) (AC) **HT 685**
Convection
An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**
Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**
Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**; (Er) **HT 302**
The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**
Convective Coefficients
Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss (TN) **HT 150**
Convective Fins
Approximate Solution for Convective Fins With Variable Thermal Conductivity (TN) **HT 680**
Convective Heat Transfer
Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**
Convective Instability
Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**
Conventional Doublet Inputs
Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
Conveying Fluids
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**
Conway, W. E. Potential Sluice Gate Flow With Generalized Boundaries (BN) **AM 368**
Cook, T. S. The Modeling of Flow Concentration in Two-Phase Materials (75-Mat-7) **MT 180**
Coolant Throughflow
Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**
Coolants
Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**
Cooling
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**
Cooling Bodies
The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
Cooling Processes
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**
Cooling Rates
Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**
Cooling Systems
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**
Dry and Wet-Peaking Tower Cooling Systems for Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**
Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**
Cooling Towers
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) **P 450**; (D) (AC) **P 456**
Analysis of Large Dry Cooling Towers With Power-Law Heat Exchanger Performance (75-WA/HT-46) **HT 345**
Copeland, J. F. Influence of Sulfur Content on the Fracture Toughness Properties of 2¼ Percent Cr-1 Percent Mo Steel **PVT 135**
Copper
Laws for Work-Hardening and Low-Temperature Creep **MT 76**
Core Catcher Design
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**
Core Noise
Combustion Generated Noise in Gas Turbine Combustors (75-GT-27) **P 242**
Core Tubes
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
Coriolis Acceleration
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
Corley, M. R. Use of a Pragmatic Information Measure as an Aid in the Design of Interactive Graphic Displays (75-DET-88) **I 118**
Cornell, R. W. Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) **P 480**
Corner Cracks
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**
Corner Flows
A Reynolds Stress Model for Turbulent Corner Flows—Part I: Development of the Model (76-FE-C) **F 261**; Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**
Correlation Methods
Multiple Jet Correlations for Gas Turbine Engine Combustor Design (75-GT-45) **P 265**; (D) **P 272**; (AC) **P 273**
Corrosion
Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**
Corrugated Fins
Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**
Corum, J. M. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**
Cosserat Surface
Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**
Costello, F. A. Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**
Cotton
Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**
A Program to Control the Hazard of the Dust From Cotton (75-Tex-A) **I 297**
Cotton, J. D. Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**
Cotton Yarns
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**
Couette Flow
A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**
Counter Flow
Mean Diameters In Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**
Counter-Rotational Whirl
Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) **F 674**; (D) **F 679, 680**; (AC) **F 680**
Coupled Flow Channels
Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**
Couplers
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**
Covert, E. E. A Study on Multielement Cascades and Airfoils (D) (AC) **F 215**
Cowley, P. E. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 561**; (AC) **L 563**
Cox, G. B., Jr. Multiple Jet Correlations for Gas Turbine Engine Combustors Design (75-GT-45) **P 265**; (D) **P 272**; (AC) **P 273**
Cox, T. S. The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**
Coy, J. J. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**
Crack Extensions
Initial Crack Extension in Two Intermediate-Strength Aluminum Alloys (76-Mat-D) **MT 152**
Crack Flank Linearity
Elastic-Plastic Fracture Toughness—A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 81**
Crack Growth
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) **P 473**
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**
Crack Initiation
Crack Initiation In Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**
Crack Opening Displacement
Elastic-Plastic Fracture Toughness: A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 213**
Crack Problems
Three-Dimensional Crack Problems (BR) **AM 522**
Crack Propagation
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) **PVT 166**
Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**

Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**
The Role of Fracture Mechanics in Design Technology (76-DET-58) **I 1243**
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**; (D) **PVT 323**; (AC) **PVT 324**

Crack Tip Behavior
Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) **MT 146**

Crack Tip Plasticity
Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**

Crack Tip Propagation
Plastic Strain Distribution at the Tips of Propagating Fatigue Cracks (75-Mat-6) **MT 24**

Crack Tips
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**

Cracked Members
Elastic-PLASTIC Analysis for Cracked Members (75-PVP-34) **PVT 47**

Cracked Plates
On the Three-Dimensional Theory of Cracked Plates (D) (AC) **AM 374**

Cracking
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Cracks
Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**
Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Cran, J. A. A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (D) (AC) **I 452**

Crank Mechanisms
An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**
Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) **I 1342**

Cranks
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**

Crash-Impacted Structural Systems
A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**

Crater Wear
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**

Cravalho, E. G. Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**

Creativity
Design Problem Solving by Functional Analysis and Creativity (75-DET-121) **I 1069**

Crecelius, W. Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (D) **L 71**; (AC) **L 72**

Creep
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) **P 473**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**
Laws for Work-Hardening and Low-Temperature Creep **MT 76**
A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**

Creep Behavior
Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**
Deformation Mechanism Maps: Their Use in Predicting Creep Behavior (75-Mat-2) **MT 125**; (D) (AC) **MT 131**
Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/APM-6) **AM 445**

Creep Buckling
Creep Buckling of a Complete Spherical Shell (76-WA/APM-8) **AM 450**
Creep Buckling of Imperfect Columns (76-APM-10) **AM 131**; (D) (AC) **AM 519**

Creep Deformation
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
A Theoretical and Experimental Investigation of Creep Problems With Variable Temperature (76-WA/APM-25) **AM 639**

Creep Fatigue
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) **PVT 166**

Creep Fracture
Creep, Viscoelasticity and Creep Fracture in Solids (BR) **MT 191**

Creep Properties
Heat-to-Heat Variation in Creep Properties of Types 304 and 316 Stainless Steels (D) **PVT 85**; (AC) **PVT 86**

Creep Rupture
On the Creep Rupture of a Tube and a Sphere (D) (AC) **AM 376**

Creep Testing
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**

Creep-Fatigue Interactions
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) **MT 244**
Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**
Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**
Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) **MT 235**

Creeping Motion
Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**

Creeping Structures
The Influence of Constitutive Relationships on Stress-Redistribution Times in Creeping Structures (BN) **AM 173**

Creep-Plasticity Interactions
An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**

Crisp, J. N. On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (D) (AC) **L 579**; Traction Characteristics of a MIL-L-7808 Oil (D) (AC) **L 612**

Critical Fluids
A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Critical Heat Flux
An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**

Critical Speeds
Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**
Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**

Critical Supersaturation Model
Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**

Critical Thickness
Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss (TN) **HT 150**

Cronin, D. L. Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

Crooker, T. W. Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**

Crosbie, A. L. A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity (TN) **HT 148**

Crossflow
Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**
Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**
Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**

Crossflow Impingement
Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**

Crossflowing Streams
Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (76-FE-8) **F 667**; (D) (AC) **F 673**

Crow, L. I. Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

Cruse, T. A. Corner Crack at the Bore of a Rotating Disk (D) **P 470**; (AC) **P 472**

Crushrolls
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**

Cryogenic Temperatures
Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**

Cryosurgery
Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (76-HT-PP) **HT 514**
Thermal Aspects of Cryosurgery **HT 543**

Crystal
Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**

Cudlin, J. J. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) **F 224**; (Er) **F 583**

Cumulative Fatigue Damage
Estimation of Cumulative Fatigue Damage Under Random Loading (75-DE-E) **I 348**

Cuppan, B. C. An Investigation of Computer Control of Machining Chatter (D) **I 1213**; (AC) **I 1214**

Cur, N. Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**

Current Profiles
Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**

Curvatures
Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (75-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**
Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**; (D) **F 780, 782**; (AC) **F 782**

Curve Fitting
An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**

Curved Bars
Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**

Curved Beam Theory
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**

Curved Channels
The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**
Entry Flow in Curved Channels (76-FE-G) **F 305**

Curved Cylinders
On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**

Curved Pipes
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**

Curved Rectangular Channels
Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**
Curved Structures
Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**; (Er) **PVT 198**
Curved Surfaces
An Approximate Method for Curved Shear Layers (TB) **F 328**
A Linear Least Squares Method for Describing and Comparing Gently Curved Three-Dimensional Surfaces (75-Prod-F) **I 48**
Curvic® Couplings
Minimizing Assembly Runout in Turbo-machines Made With Curvic® Couplings (75-GT-43) **P 37**
Cusano, C. Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (D) (AC) **L 462**
Cutting Force Models
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**
Cutting Process
A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**
Cutting Rate
Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory (75-Prod-4) **I 481**; (D) **I 495**; (AC) **I 496**; Part 2: Verification and Applications (75-Prod-5) **I 487**; (D) **I 495**; (AC) **I 496**
Cutting Speed
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Cutting Temperature
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**
Cutting Tools
An Analysis of Tool Life Based on Flank-Face Wear—Part 1: Theory (75-WA/Prod-28) **I 221**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) **I 227**
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 246**
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **I 1200**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**
Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**
Cyclic Creep
Crack Initiation in Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**
A Parametric Approach to Cyclic Creep (76-APM-E) **AM 28**
Cyclic Deformation
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Cyclic Hardening
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**
Cyclic Life Studies
Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**
Cyclic Loading
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**
Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**
Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**
Cyclic Plasticity
An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**
Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**
Cyclic Squeeze Films
Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**
Cyclic Stresses
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**
Cyclic Temperatures
Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/APM-6) **AM 445**
Cycling
Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**
Cylinder Flow Pressures
Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**
Cylinder Pressure Sensors
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**
Cylinders
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**
An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**
Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure (BN) **AM 517**
On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**
Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**
Experimental Study of Free Convective Heat Transfer From Inclined Cylinders (TN) **HT 672**
Forces on Cylinders Near a Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**
Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**
Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**
Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**
Nonlinear Vibrations of Thin Cylinders (BN) **AM 370**
A Note on the Two-Dimensional Cylinder Wake (TB) **F 318**
Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**
An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**
Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**
Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) **AM 124**
Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) **AM 419**
Transient Filtration in a Porous Elastic Cylinder (76-WA/APM-16) **AM 594**
Turbulent Transport to a Rotating Cyclinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**
Cylindrical Blast Waves
Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics (TB) **F 580**
Cylindrical Cavities
Active Sites in Boiling (76-HT-JJJ) **HT 401**
Cylindrical Inducers
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Cylindrical Rods
Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**
Stress-Focusing Effect in a Uniformly Heated Cylindrical Rod (76-APM-Z) **AM 464**
Cylindrical Roller Bearings
An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) **L 538**; (D) **L 543, 544**; (AC) **L 546**
Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (75-LubS-3) **L 66**; (D) **L 71, 72**; (AC) **L 72**
Cylindrical Shells
Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) **MT 337**
Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**
Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (76-WA/APM-3) **AM 480**
Cylindrical Tubes
A Note on Vortex Breakdown in a Cylindrical Tube (TB) **F 322**
Cylindrical Vessels
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**
Cylindrical Wall Jets
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**
Cziglenyi, L. Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

D

Dafalias, Y. F. Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**
Dagan, G. Scattering of Water Waves by a Pair of Semi-Infinite Barriers (D) (AC) **AM 378**
Dahler, J. S. Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**
Daikoku, T. Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**
Daley, G. C. Physical Interpretations of the Instabilities Encountered in the Deflection Equations of the Unconstrained Pipeline (75-Pet-1) **I 1099**
Dally, J. W. *(reviewer)* Photoplasticity (BR) **AM 383**
Dalton, R. B. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 544**; (AC) **L 546**
Damage Lines
A Cumulative Damage Rule Based on the Knee Point of the S-N Curve (76-Mat-E) **MT 316**
Damped Sandwich Plates
Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**
Damped Systems
Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**
Damper Support
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**
Damping
Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**; (D) **AM 699**; (AC) **AM 700**
Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**
Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**

Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**

On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**

Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Dancey, C. L. A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) **F 568**; (D) **F 570, 571**; (AC) **F 572**

Danilowich, M. S. The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**

Dareing, D. W. The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

Dasgupta, S. On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**

Dash, J. G. *(author)* Films on Solid Surfaces (BR) **L 479**

Datta, S. Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**

Davidson, D. L. Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**; Plastic Strain Distribution at the Tips of Propagating Fatigue Cracks (75-Mat-6) **MT 24**

Davidson, J. K. Minimizing Assembly Runout in Turbomachines Made With Curvic® Couplings (75-GT-43) **P 37**

Davis, L. R. Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**

Davis, T. L. The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**

Davis, W. R. Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**

De Choudhury, P. Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

de Gee, A. W. J. On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) **L 575**; (D) (AC) **L 579**

de Larminat, Ph. Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

de Pater, A. D. *(editor)* The Mechanics of the Contact Between Deformable Bodies (BR) **AM 701**

de Socio, L. Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**

Deadbeat Controllers

Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**

Dean, R. B. A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**

Dean, R. C., Jr. On the Decline of U. S. Technology (Ed) **F 141**; Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 400**; (AC) **F 401**; Tales of Misteaks (Ed) **F 589**

Deep Drawing

Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) **MT 337**

Deep Water Applications

On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**

Deflection

A Bound for the Deflection of a Beam-Column (BN) **AM 181**

Creep Buckling of Imperfect Columns (76-APM-10) **AM 131**

On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**

Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**

Minimum-Weight Design of Vibrating Elastic Structures With Dynamic Deflection Constraint (BN) **AM 178**

Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**

Note on the Large Deflections of Irregular Shaped Plates by the Method Conformal Mapping (BN) **AM 356**

Optimization of a Ribbed Table for Minimum Weight and Minimum Deflection (75-DE-K) **I 30**

Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Deflection Equations

Physical Interpretations of the Instabilities Encountered in the Deflection Equations of the Unconstrained Pipeline (75-Pet-1) **I 1099**

Deformation

Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**

Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**

Development of Constitutive Relation for Plastic Deformation From a Dislocation Model (75-Mat-8) **MT 52**

The Inelastic Large Deformation of Beams (BN) **AM 689**

Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) **AM 69**

Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**

Some New Approaches in the Analysis of High-Temperature Deformation (76-Mat-F) **MT 2**

Deformation Fields

Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) **MT 146**

Deformation History

On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**

Deformation Mechanism Maps

Deformation Mechanism Maps: Their Use in Predicting Creep Behavior (75-Mat-2) **MT 125**; (D) (AC) **MT 131**

Deformation Models

An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**

Deformation Processing

The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) **I 1237**

Del Giudice, S. Thermal Aspects of Cryosurgery **HT 543**

Delaney, R. A. Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356**; (D) **P 363**; (AC) **P 364**

Delay Scheduling

Scheduling Delays in Synchronous Transportation Networks **DS 173**

Demiray, H. Stresses in Ventricular Wall (76-APM-31) **AM 194**

Denn, M. M. Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**

Density Changes

Effect of Density Change on Multidimensional Conduction Phase Change **HT 550**

Density Inversion

An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**

Density-Wave Oscillations

An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**

Deposits

Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

Depth Control Systems

Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**

Deriaz Pumps

Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) **F 674**; (D) **F 679, 680**; (AC) **F 680**

Derner, W. J. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 544**; (AC) **L 546**

DeRossett, T. A. Generalized Flow Across an Abrupt Enlargement (D) **P 333**; (AC) **P 334**

Descusse, J. Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

Design

On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**

Design Analysis

Design Analysis of a Snap-Action Mechanism (76-DE-35) **I 1188**

Design Charts

Development of Design Charts for Bolts Preloaded up to the Plastic Range (75-DE-B) **I 849**

Design Engineering

On The Use of The Extreme Value Distribution in Reliability Analysis and Design (75-DET-123) **I 1080**

Design Equations

Design Equations for the Short-Time Viscosity Behavior of a Lubricant (TB) **L 476**

Design Point Efficiency

Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) **P 411**

Design Problem Solving

Design Problem Solving by Functional Analysis and Creativity (75-DET-121) **I 1069**

Design Technology

The Role of Fracture Mechanics in Design Technology (76-DET-58) **I 1243**

Design Tools

The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**

Determinants

A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) **AM 349**

Deterministic Effects

Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**

DeVries, M. F. An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**

Dhalla, A. K. Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (75-PVP-31) **PVT 33**; (D) **PVT 45**; (AC) **PVT 46**

Dhanak, A. M. Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**

Dhande, S. G. Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (75-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**

Diamond Grinding Wheels

Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Diaphragms

The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**

Dichloromethane

A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Dickinson, D. M. Practical Method for Estimating Number of Test Readings Required (D) (AC) **P 392**

Dies

Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**

Diesburg, D. E. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) **I 708**

Dietz, H. K. A Linear Least Squares Method for Describing and Comparing Gently Curved Three-Dimensional Surfaces (75-Prod-F) **I 48**

Diffractions

Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**

Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**

Diffusers

Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (D) (AC) **F 776**; (TB) **F 320**

Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**

Flow Control in Wide-Angled Conical Diffusers **F 728**

Flow Regimes in Two-Dimensional Ribbed Diffusers (D) **F 126**; (AC) **F 127**

Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

Performance and Flow Regime of Annular Diffusers With

Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**; (D) (AC) **F 585**

Diffusion
An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**
A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**
Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**

Diffusion Bonding
Accelerated Diffusion Bonding Using Induced Forces (75-GT-36) **P 65**

Diffusion Limited Models
A Diffusion Limited Model That Accurately Predicts the No_x Emissions From Gas Turbine Combustors Including the Use of Nitrogen Containing Fuels (75-Pwr-11) **P320**

Dilatant Fluids
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**

Dill, J. F. A Critical Survey of High Pressure Lubricant Models (D) **L 265**; (AC) **L 266**

Diller, K. R. An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**

DiPrima, R. C. Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**

Discharging Gas Reservoir
Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Discontinuity
Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**
Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**
Optimal Command Generation for Tracking a Class of Discontinuous Trajectories (76-Aut-R) **DS 167**

Discrete Holes
Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**

Discrete Optimal Control
"Optimum Linear Preview Control With Application to Vehicle Suspension"—Revisited (76-Aut-PP) **DS 309**

Discrete-Hole Cooling
The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**

Discrete-Time Observers
Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**

Discus Throw
The Dynamics of Discus Throw (76-WA/APM-34) **AM 531**

Disk Brakes
An Analysis of Heat Transfer and Fade in Disk Brakes (75-DE-A) **I 385**

Disks
The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**
Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**
Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**
Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**
Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**
The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) **AM 485**
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **L 214**; (D) (AC) **L 222**
Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**

Dislocation Links
A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**

Dislocation Models
Development of Constitutive Relation for Plastic Deformation From a Dislocation Model (75-Mat-8) **MT 52**

Dispersion
An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**

Displacement Machinery
Is There Any Fluids Engineering Challenge Left In Positive Displacement Machinery? (Op) **F 142**

Displacement Vectors
Finite Rotations and Associated Displacement Vectors (BN) **AM 698**

Dissipation
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**

Dissolved Oxygen
A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**

Distilled Water
Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**

Distortions
Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Distributed Parameter Systems
Transfer Functions of Hyperbolic Distributed Parameter Systems (TB) **DS 318**

Distributed System Identification
Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**

Divergent Channel
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**

Divided Chambers
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Dobay, G. F. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (D) (AC) **F 467**

Dobson, P. D. Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**

Doebelin, E. O. *(author)* Measurement Systems, Application and Design, Revised Edition (BR) **DS 204**

Dog Aorta
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Doll, R. W. On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**

Dolodarenko, A. G. Effects of Built-Up Edge in Drilling (75-WA/Prod-17) **I 287**

Domingos, H. Transient Temperature Rise in Layered Media (TN) **HT 329**

Döner, M. An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) **P 473**

Doolan, P. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**

Douglas, W. J. M. Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**; Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**; Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**

Dow, T. A. A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (D) (AC) **L 432**; Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (D) **L 284**; (AC) **L 285**

Dowell, E. H. *(author)* Aeroelasticity of Plates and Shells (BR) **AM 382**

Downey, C. L. Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Downing, N. L. Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**

Downs, B. Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Downward Slug Flow
Vertically Downward Two-Phase Slug Flow **F 715**

Dowson, D. Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (75-Lub-11) **L 223**; (D) (AC) **L 228**; Part II—Ellipticity Parameter Results (75-Lub-12) **L 375**; (D) **L 381, 382**; (AC) **L 382**; The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**; A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342**; (AC) **L 343**

Drag
Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**

Drag-Reducing Flows
Calculation of Velocity Profiles in Drag-Reducing Flows (TB) **F 563**

Drag Reduction
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**

Drain Pumps
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) **P 401**

Dravinski, M. Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**; Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**

Drew, D. A. Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**

Drift Eliminators
Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) **P 450**; (D) (AC) **P 456**

Drifting Buoy-Cable-Array Assembly
Dynamics of a Drifting Buoy-Cable-Array Assembly Used in Submarine Detection (75-DET-27) **I 935**

Drilling
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) **I 287**; (D) (AC) **I 735**

Dring, R. P. Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (D) **F 441**; (AC) **F 442**

Drive Mechanisms
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**; Part 2: Overall System Model (76-RT-2) **I 744**; Part 3: System Evaluation (76-RT-3) **I 751**; Part 4: Overall System Performance (76-RT-4) **I 756**

Droplet Formation
Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**

Dryer, F. L. The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (D) **P 431**; (AC) **P 434**

Drzewiecki, T. M. Performance of Hydraulic Gas Compressors (D) (AC) **F 653**

D'Souza, A. F. Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) **I 258**

Dua, S. S. Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**

Dual-Rotor Jet Engine
A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) **I 876**

Duct Acoustics
"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Duct Geometry
The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**

Ductile Beams
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**

Ductile Flow
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**

Ductile Fracture
Elastic-Plastic Fracture Toughness: A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 213**
Formation of Cavities From Nondeformable Second-Phase Particles in Low Temperature Ductile Fracture **MT 60**
The Initiation and Propagation of Ductile Fracture in Low

Strength Steels (75-Mat-10) **MT 37**

Ductile Machine Elements
Prediction of Failure in Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**

Ductility
High Strain Rate Tensile Properties of Annealed 2 ¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**
Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**

Ducts
An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**
A Correction to Noncircular Duct Hot Patch Data (TN) **HT 332**
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**
Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**
The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**

Dudek, J. A. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**

Duffey, T. A. Transient Response of Viscoplastic and Viscoelastic Shells Submerged in Fluid Media (76-APM-K) **AM 137**

Duffy, J. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**

Dungan, T. J. Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (D) **F 679**; (AC) **F 680**

Dunkerley-Mikhlin Estimates
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) **AM 345**

Dunn, W. E. Heat and Mass Transfer From Freely Falling Drops (D) **HT 339**; (AC) **HT 340**; Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Durban, D. On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**

Durgin, W. W. An Experimental Study of Internal Hygrocysts (D) **F 692**; (AC) **F 693**

Durham, S. D. A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**

Durocher, L. L. A Singularity Approach to Circular Plates (76-DE-28) **I 1176**

Dust
A Program to Control the Hazard of the Dust From Cotton (75-Tex-A) **I 297**

Dvorak, F. A. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (D) (AC) **F 643**

Dvorak, G. J. Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**

Dwyer, H. A. Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**; Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Dwyer, O. E. Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**

Dvorak, F. A. The Suppression of Flow Separation by Sequential Wall Jets (D) **F 453**; (AC) **F 454**

Dybbs, A. Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**

Dyer, D. F. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**

Dynamic Acceptance Tests
Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**

Dynamic Analysis
On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**
Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**

Dynamic Behavior
Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**

Dynamic Bending Stresses
Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**

Dynamic Buckling
Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**

Dynamic Characteristics
The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**
Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**

Dynamic Fracture
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**

Dynamic Instability
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**

Dynamic Loading
Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**

Dynamic Loads
Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**; (Er) **PVT 198**

Dynamic Optimization
On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**

Dynamic Response
A General Principle in Dynamic Response of Fluid-Structure Interaction (BN) **AM 697**

Dynamic Stability
Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**

Dynamic System Models
A Preliminary Analysis of Ski Release Binding Dynamic Properties (76-Aut-BB) **DS 301**

Dynamic Systems
Bond Graphs for Nonholonomic Dynamic Systems (76-WA/Aut-3) **DS 361**

Dynamic Tear
A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**

Dynamic Testing
Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Dynamically Loaded Beams
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**

Dynamics
Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**

E

Earles, S. W. E. Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**

Earthquake Ground Motion
Identification of Structures Through Records Obtained During Strong Earthquake Ground Motion (75-DET-77) **I 1347**

Eccentric Holes
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**

Eccentric Limit Load
Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**

Eccentric Rotation
Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**

Eckardt, D. Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**

Eckber, D. P. Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**

Economic Growth
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) **DS 75**

Economic Systems
Modeling and Optimization of Economic System in Socialist Countries (76-Aut-GG) **DS 252**
Optimal Control of a National Economic System With Full Employment (76-Aut-Y) **DS 80**

Ecosystems
Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**
Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

Eddy Viscosity
Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**

Edge Constraints
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) **AM 69**

Edge-Cracked Strips
Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**

Editorials
On the Decline of U. S. Technology **F 141**
The Second Generation Reports (Ed) **DS 213**
Tales of Misteaks **F 589**

Edmondson, A. J. Failure Analysis of a Redundant Reeving Hoist (76-DE-21) **I 1166**

Edwards, C. L. Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Edwards, D. C. Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Edwards, D. K. Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**; Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**; Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**; Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**

Eftis, J. Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (D) **PVT 45**; (AC) **PVT 46**

Egerton, D. An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**

Eggers, J. M. Mixing and Reacting Flow Characterization (D) (AC) **F 136**

Ehlert, J. Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Ehrler, R. F. Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**

Eichhorn, R. Natural Convection From a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) **HT 446**

Eide, S. A. Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

Eidelberg, B. E. Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**

Eigenvalue Problems
Formulation of the Eigenvalue Problem for an Unconstrained Circular Bar (BN) **AM 166**

Eigenvalues
On the Specification of Eigenvalues in Vibratory Systems (BN) **AM 359**

Eimermacher, J. P. Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**

Einaudi, F. The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**

Eisenberg, M. A. A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**

Ejector Flow
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

El-Ariny, A. S. Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**; Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**; A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**

El Baradie, M. A. Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**

El Taher, R. M. M. The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**

Elastic Beams
Application of the Optimal Preview Control Theory to the

Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**

Elastic Contact Problems

The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**

Elastic Crack Propagation

Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**

Elastic Deformations

Small Elastic Deformations of Thin Shells (BR) **AM 702**

Elastic Displacements

Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**

Elastic Distortion

Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**

Elastic Foundations

Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**

Elastic Half Space

Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**

Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**

Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) **AM 419**

Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) **AM 625**

Elastic Hollow Spheres

On the Axial Symmetric Contact Problem Involving Elastic Hollow Spheres (Er) **L 56**

Elastic Inclusions

Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**

Elastic Layers

Interface Separation in a Frictionless Contact Problem for an Elastic Layer (BN) **AM 175**

Elastic Members

Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**

Elastic Modulus

Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**

Elastic Pipes

Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**

Elastic Plates

Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**

Elastic Rectangles

On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**

Elastic Shells

Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**

The Dynamic Response of an Elastic Shell of Revolution Submerged in an Acoustical Medium (BN) **AM 514**

Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**

The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**

Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**

Elastic Solids

The Dynamic Response of an Elastic Half Space With an Over-lying Acoustic Fluid (76-APM-2) **AM 39**

Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**

Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**

Elastic Spheres

Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**

Elastic Stability

An Introduction to the Elastic Stability of Structures (BR) **AM 383**

Nonlinear Theory of Elastic Stability (BR) **AM 521**

Elastic Stiffness

Stresses in Ventricular Wall (76-APM-31) **AM 194**

Elastic Strips

Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**

Elastic Structures

Minimum-Weight Design of Vibrating Elastic Structures With Dynamic Deflection Constraint (BN) **AM 178**

Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**

Elastic Supports

Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**

Elastic Systems

Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**

Elasticity

Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Finite Elastic Deformation of an Annular Rotating Disk Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**

Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**

On Some Unbonded Contact Problems in Plane Elasticity Theory (76-APM-W) **AM 263**

Elasticity Problems

Surface Integral Method Applied to the Problems of an Elastic Strip With Periodically Spaced Holes (76-APM-NN) **A 599**

Elasticity Solutions

Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**

Elastic-Membered Linkages

Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) **I 788**

Elastic-Plastic Analysis

Elastic-Plastic Analysis for Cracked Members (75-PVP-34) **PVT 47**

Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**; (Er) **PVT 198**

Elastic-Plastic Fracture Toughness—A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 81**; (D) (AC) **PVT 213**

Elastic-Plastic Columns

Creep Buckling of Imperfect Columns (D) (AC) **AM 519**

Elastic-Plastic Deformation

Formation of Cavities From Nondeformable Second-Phase Particles in Low Temperature Ductile Fracture **MT 60**

Elastic-Plastic Flow

Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Elastic-Plastic Response

Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Elastodynamic Motion

A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**

Elastodynamics

Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

Elastohydrodynamic Contacts

Infrared Emission Spectra of Elastohydrodynamic Contacts (75-LUB-10) **L 230**

Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**

Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**

Elastohydrodynamic Contacts

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Elastohydrodynamic Lubrication

A Critical Survey of High Pressure Lubricant Models (75-Lub-15) **L 258**; (D) **L 265, 266**; (AC) **L 266**

Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**

Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**

On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) **L 367**; (D) **L 373**; (AC) **L 374**

Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**

An Investigation in the Field of Elastohydrodynamics (76-LubS-4) **L 491**

Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part II—Ellipticity Parameter Results (75-Lub-12) **L 375**; (D) **L 381, 382**; (AC) **L 382**

Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

Elastohydrodynamic Squeeze Films

Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**

Elastohydrodynamic Traction

A Simplified Model for the Elastohydrodynamic Traction Between Rollers (76-Lub-6) **L 357**; (D) **F 361**

Elastohydrodynamics

Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**

On Reciprocating Toroidal Seals (75-WA/DE-20) **I 783**

Elastomer Seals

An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**

Elastoplastic Analysis

Elastoplastic Analysis of Space Framework: Initial Force Schemes (D) (AC) **PVT 87**

Elasto-Plastic Medium

On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**

Elastoplastics

Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**

Elastostatics

Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**

Electric Conversion Systems

Wind-Powered Electric Utility Plants (75-WA/Pet-1) **I 293**

Electric Fields

Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**

Electric Power Generation

A Theory of Concentration of Solar Energy on a Central Receiver for Electric Power Generation (Er) **P 539**

A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**

Electric Power Lines

Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**

Electric Utility Industry

Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**

Electro Discharge Machining

Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Electrochemical Machining

Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**

Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) **AM 54**

Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) **I 360**

Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**

Electrodes

Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Electrodynamically Levitated Vehicles

Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Electro-Hydraulic Servovalves

The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**

Electromechanical Dynamics

Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**

Electronic Scanning Instrumentation

Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**

Electromyogram

Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**

Electroslag Remelting

Improved 2¼ Cr-1 Mo Pressure Vessel Steel Through Electroslag Remelting (76-Pet-1) **PVT 298**

Electrostatic Plane Problems

The Interaction of Collinear Arrays of Griffith Cracks on Two

Radial Lines (75-DET-124) **I 1086**

Elevated Temperatures
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) **P 473**
Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**
Elevated Temperature Design—Development and Implementation of Code Case 1592 **PVT 222**
Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**
Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
New Rules for Construction of Section III, Class 1 Components for Elevated Temperature Service **PVT 214**
Prediction of Failure in Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**

El-Fattah, Y. M. Simulation of Market Price Formation as a Game Between Stochastic Automata (76-Aut-Z) **DS 91**

Elkouh, A. F. Fluid Inertia Effects in Non-Newtonian Squeeze Films (76-Lub-J) **L 409**

Ellingwood, B. R. Probabilistic Assessment of Low-Cycle Fatigue Behavior of Structural Welds (75-PVP-29) **PVT 26**

Ellipsoidal Asperity
Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**

Ellipsoidal Cavities
Stresses at the Surface of a Flat Three-Dimensional Ellipsoidal Cavity (75-Mat-12) **MT 164**

Ellipsoidal Heads
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**

Elliptic Cylinders
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**

Elliptical Plates
Buckling of an Elliptical Plate With Simply Supported Edge Under Uniform Compression (76-APM-AA) **AM 455**
Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**

Elliptic Rings
The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

Ellipticity Parameters
Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part II—Ellipticity Parameter Results (75-Lub-12) **L 375**; (D) **L 381, 382**; (AC) **L 382**

Ellis, A. T. Effect of Polymer Additives on Jet Cavitation (D) **F 111**; (AC) **F 112**

Ellis, J. R. An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**

Elmaraghy, H. A. A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) **I 183**

Elrod, H. G. *(contributor)* List of Theses Topics in Tribology—II: Hydrodynamic Lubrication (76-Lub-G) **L 394**

Elson, J. P. A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**

Emergency Control
Emergency Control of Vehicle Platoons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**; System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**

Emergency Cooling Conditions
Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Emerson, P. D. Spinning Frame Noise Sources (75-Tex-7) **I 840**

Emery, A. F. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**; Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**; An Energy Method Determination of Large Cable Dynamics (76-APM-20) **AM 330**; The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**; The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**; A Reynolds Stress Model for Turbulent Corner Flows—Part I: Development of the Model (76-FE-C) **F 261**

Emission Spectra
Infrared Emission Spectra of Elastohydrodynamic Contacts (75-LUB-10) **L 230**

Emission Standards
Experimental Investigation of a New Concept of Fuel Prevaporization (75-GT-6) **P 305**

Emissions
Emission as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**
Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**

Enclosed Spaces
Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**

Enclosures
Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**
Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**

End Wall Effects
Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

End Walls
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**

Endochronic Theory
Strain-Rate Effect in the Endochronic Theory of Viscoplasticity (76-APM-G) **AM 92**

Energy
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**

Energy Conservation
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**

Energy Metabolism
The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Energy Methods
An Energy Method Determination of Large Cable Dynamics (76-APM-20) **AM 330**

Energy Sources
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Energy Stability Limits
The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**

Energy Transmission
Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**

Engel, P. A. Abrasive Impact Wear of Type (75-Lub-28) **L 330**; (D) (AC) **L 334**

Engine Stalls
Ground Vortex—Limit to Engine/Reverser Operation (75-GT-3) **P 258**; (D) **P 263**; (AC) **P 264**

Engineering Components
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**

Engineering Managers
The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) **I 761**

Engineering Systems
An Introduction to Engineering Systems (BR) **DS 352**

Engineers
Alan Hugh Stenning—1928–1973—Distinguished Engineer **F 607**

Entrance Regions
The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**
Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**

Entry Flow
Entry Flow in Curved Channels (76-FE-G) **F 305**

Entry Velocity Profiles
Parallel Porous Plate Channel Flow Characteristics Resulting from Nonuniform Entry Velocity Profiles (D) (AC) **F 125**

Entrance Region Solutions
Symmetrical Laminar Channel Flow With Wall Suction (75-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**

Entrance Regions
Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**
A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) **AM 13**

Entropy Fluctuations
Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**

Envelope Curves
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**

Environmental Factors
Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**

Environmental Water Quality
Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Enzyme Reactions
Modeling of Enzyme Reaction Kinetics (76-Aut-EE) **DS 266**

Epitrochoids
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**

Epoxy Laminates
Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**

Epstein, M. Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**; Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**

Equipment Failure Costs
Optimum Reliability at Minimum Cost (75-DET-120) **I 1066**

Equivalent Circular Lines
Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**

Equivalent Linearization
Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**

Equivalent Systems
Equivalent One-Dimensional System for Analysis of Taper Leaf Springs (75-DE-O) **I 39**

Erdogan, F. Interface Separation in a Frictionless Contact Problem for an Elastic Layer (BN) **AM 175**

Erdogan, M. E. Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**

Erf, R. K. *(editor)* Holographic Nondestructive Testing (BR) **AM 523**

Eringen, A. C. *(editor)* Review of Continuum Physics (BR) **AM 384**

Errichello, R. Application of EHD Oil Film Theory to Industrial Gear Drives (D) (AC) **I 633**

Eshel, A. Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) **L 344**; (D) (AC) **L 347**

Estuaries
Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**

Ethanol Meniscus
Evaporation From a Capillary Tube (76-HT-NN) **HT 178**

Ethylene Glycol
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**

Etsion, I. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**; The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**; Leakage-Free Journal Bearings (76-Lub-F) **L 441**; An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**

Eusepi, M. Design and Evaluation of a 3 Million DN

Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**

Eutrophication
Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

Evaporation
A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**
Evaporation From a Capillary Tube (76-HT-NN) **HT 178**
Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

Ewins, D. J. Vibration Modes of Mistuned Bladed Disks (75-GT-114) **P 349**

Excitation
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**

Exhaust Emissions
Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**

Expanders
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**

Expansion Joints
Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**

Experimental Data
Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**

Experimental Stress Analysis
Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**

Extended Surfaces
Efficiency of Extended Surface (Er) **HT 34**

Extensional Rigidities
Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**

Extensional Stress Pulses
Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**

External Pressurization
Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**

Extreme Value Distribution
On The Use of The Extreme Value Distribution in Reliability Analysis and Design (75-DET-123) **I 1080**

Extrusion
Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**

Extrusion Flow
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Eyman, E. D. Optimal Control in the Presence of Nondifferentiable State Constraints **DS 432**

Ezekewe, C. I. Measured *uw* Stress Gradients in a Three-Dimensional Turbulent Boundary Layer (TB) **F 768**

Ezzat, H. A. On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) **L 90**

F

Fabian, J. M. The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**

Face Milling Cutters
Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**

Fade Characteristics
An Analysis of Heat Transfer and Fade in Disk Brakes (75-DE-A) **I 385**

Faghri, A. Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**

Failure Analysis
Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**
Failure Analysis of a Redundant Reeving Hoist (76-DE-21) **I 1166**

Failure Criterion
An Incremental Criterion for Time-Dependent Failure of Materials (76-Mat-H) **MT 140**

Failure Predictions
Prediction of Failure in Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**

Failure-Experience Matrix
The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**

Falling Film
Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Falsetti, H. L. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Fan Noise
"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Fanaritis, J. P. The Tubular Exchanger Manufacturers Association and Industry **PVT 185**

Fand, R. M. Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

Farquhar, B. W. Ground Vortex—Limit to Engine/Reverser Operation (D) **P 263**; (AC) **P 264**

Farrar, L. C. Film Boiling in ascaling Liquid (76-HT-MM) **HT 173**

Farrell, R. Determination of Configuration Factors of Irregular Shape (TN) **HT 311**

Fast Flux Test Facility
Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**

Fasteners
Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**
On Eccentrically Loaded Fasteners (75-WA/DE-9) **I 776**

Fatigue
An Analysis of Elevated Temperature Fatigue and Creep Crack Growth (75-WA/GT-16) **P 473**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

Fatigue Behavior
Probabilistic Assessment of Low-Cycle Fatigue Behavior of Structural Welds (75-PVP-29) **PVT 26**

Fatigue Crack Growth
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**
Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) **MT 235**
Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**

Fatigue Cracks
Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**
Plastic Strain Distribution at the Tips of Propagating Fatigue Cracks (75-Mat-6) **MT 24**

Fatigue Damage
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Mean Stress (76-Mat-M) **MT 249**
Estimation of Cumulative Fatigue Damage Under Random Loading (75-DE-E) **I 348**

Fatigue Experiments
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Fatigue Life
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**

Fatigue Life Distribution
A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) **I 183**

Fatigue Limits
Estimation of Fatigue Limit of Steel Subjected to Bending Loads (TB) **MT 381**

Fatigue Reliability
Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**

Fatigue Tests
Rotating Bending Fatigue Tests in a Hydrostatic Environment (TB) **MT 380**

Faulkner, M. G. Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**

Fazekas, G. A. On Belt Wear (TB) **I 732**; On Bidirectionally Snapping Linkages (TB) **I 1363**; Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**; On Eccentrically Loaded Fasteners (75-WA/DE-9) **I 776**; On Optimal Bolt Preload (75-WA/DE-14) **I 779**; On Reciprocating Toroidal Seals (75-WA/DE-20) **I 783**

Fearnehough, G. D. Elastic-Plastic Fracture Toughness: A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 213**; Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (D) (AC) **PVT 65**

Feedback Control
Minimax Output Feedback Regulators (76-Aut-JJ) **DS 270**
The Origins of Feedback Control (BR) **DS 204**

Fehler, A. Experimental Investigation of a New Concept of Fuel Prevaporization (75-GT-6) **P 305**

Fein, R. S. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**; *(contributor)* List of Theses Topics in Tribology—II: Lubricant Properties (76-Lub-G) **L 394**

Feingold, A. A New Look at the Superposition of Boundary Conditions in the Evaluation of Temperature Distribution in a Finite Rectangular Plate With Adiabatic Faces at Steady State (TN) **HT 527**

Fejer, A. A. Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (D) **F 281**; (AC) **F 282**

Felmley, C. R., Jr. Pressure Vessel Research Committee 1976 Annual Report **PVT 328**; WRC Bulletin 212—December 1975: Bibliography of Published Reports **PVT 188**; Limit Analysis Studies of Pressure Vessels **PVT 96**; Long-Range Plan for Pressure Vessel Research—Fourth Edition—WRC Bulletin 209 **PVT 96**; Summary Report on the Industrial Cooperative Program Materials Property Data **PVT 96**

Feng, W. W. On the Specification of Eigenvalues in Vibratory Systems (BN) **AM 359**

Fenton, R. G. Optimum Reliability at Minimum Cost (75-DET-120) **I 1066**

Fernandes, R. The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) **AM 59**

Ferritic Base Metals
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Ferritic Steels
An Evaluation of the Material Capabilities of Low Carbon 2¼ Cr-1 Mo Steel Forgings (76-Pet-40) **PVT 316**

Fetteroll, F. P. An Evaluation of the Material Capabilities of Low Carbon 2¼ Cr-1 Mo Steel Forgings (76-Pet-40) **PVT 316**

Ferrous Materials
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**

Fettahlioglu, O. A. Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**; (Er) **PVT 198**

Fiber Preparation
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**

Fiber-Reinforced Plastics
Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**

Fibre-Reinforced Beams
Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**
Fibrous Composites
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Fibrous Filters
A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters (BN) **AM 184**
Field, G. J. An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**
Field, M. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (D) **I 1199**; (AC) **I 1200**
Field Evaluations
Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**
Fields, B. A. Elastic-Plastic Fracture Toughness—A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 81**
Filament Yarns
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**
Fillet-Type Welds
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**
Film Boiling
Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**
Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**
Film Condensation
Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**
Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**
Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**
Film Cooling
The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) **P 457**; (D) (AC) **P 464**
Film Cooling With Injection Through Slots (TB) **P 556**
Film Hydrodynamics
On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**
Film Injection
Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**
Film Slope
Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**
Film Thickness
Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**
The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**
Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**
Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**
Filters
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
Filtration
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**
Transient Filtration in a Porous Elastic Cylinder (76-WA/APM-16) **AM 594**
Filtration Efficiency
A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters (BN) **AM 184**
Fin Arrays
Optimization of Radiating Fin Arrays With Respect to Weight **HT 643**
Fine Powders
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**
Fine-Mesh Screens
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
Finite Cylinders
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**
Finite Deflections
Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**
Finite Elastic Deformation
Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**
Finite Elasticity
Stresses in Ventricular Wall (76-APM-31) **AM 194**
Finite Element Analysis
Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**
Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**
Finite Element Computation
A Rational Finite Element Basis (BR) **L 635**
Finite Element Methods
Application of Finite Element Methods to Lubrication: An Engineering Approach (Er) **L 39**; Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**
Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (TN) **HT 525**
A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**
Finite Element Models
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Finite Element Solutions
Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) **MT 146**
Finite Elements
The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
On the Use of Finite Elements in Fracture Analysis of Pressure Vessel Components (75-PVP-20) **PVT 8**
Finite Porous Bearings
Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Finite Rods
Wave Propagation in Finite Rods of Voigt Material (BN) **AM 182**
Finite Rotations
Finite Rotations and Associated Displacement Vectors (BN) **AM 698**
Fins
Approximate Solution for Convective Fins With Variable Thermal Conductivity (TN) **HT 680**
Experiments on a Three-Row Fin and Tube Heat Exchangr (TN) **HT 520**
Transient Response of Straight Fins: Part II (TN) **HT 324**
Fireside Fouling
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) **P 517**
Fish, R. W. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) **P 457**; (D) (AC) **P 464**
Fisher, H. D. Modal Coefficients for the Axisymmetric Response of Thin Circular Plates (BN) **AM 511**
Fisher, H. N. Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) **HT 485**
Fittings
Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**
Fiveland, W. A. Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**
Fixed Edge Bending
A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**
Flames
The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**
Flanagan, R. C. Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**; Part 2: Overall System Model (76-RT-2) **I 744**; Part 3: System Evaluation (76-RT-3) **I 751**; Part 4: Overall System Performance (76-RT-4) **I 756**
Flanges
The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**
Flank Wear
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 246**
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**
Flank-Face Wear
An Analysis of Tool Life Based on Flank-Face Wear—Part 1: Theory (75-WA/Prod-28) **I 221**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) **I 227**
Flat Duct
Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**
Flat Plate Cascades
Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**
Flat Plates
Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**
Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate (TB) **F 119**
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**
Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Flavin, J. N. A Bound for the Deflection of a Beam-Column (BN) **AM 181**
Fleming, D. P. Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**
Fletcher, L. S. Thermal Contact Conductance of Lead Ferrite and Boron Nitride (TN) **HT 331**
Flexible Rotors
Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**
Flexible Supports
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**
Flexibility
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**
Flexible Asymmetric Rotors
A Modal Transient Simulation Model for Flexible Asymmetric Rotors (75-DET-34) **I 312**
Flexible Cables
Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**
Flexible Mounting
Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**
Flexible Rotors
Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**
Experimental Evaluation of Multiplane-Multispeed Rotor

Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**
A Linear Programming Approach for Balancing Flexible Rotors (75-DET-94) **I 1030**
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) **L 57**
The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**

Flexible Walls

Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) **L 344**; (D) (AC) **L 347**

Flexural Vibrations

Nonlinear Flexural Vibrations of Thin Shallow Translational Shells (BN) **AM 180**
Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Floating Platforms

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Flow

Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (D) (AC) **F 776**
Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) **AM 49**
Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**
Axisymmetric Potential Flow Over Two Spheres in Contact (D) **AM 373**; (AC) **AM 374**
The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**
Calculation of Velocity Profiles in Drag-Reducing Flows (TB) **F 563**
Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
A Constitutive Equation for High-Temperature Flow (D) (AC) **MT 190**
A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) **F 568**; (D) **F 570, 571**; (AC) **F 572**
The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**
Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**
Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**
Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**
Entry Flow in Curved Channels (76-FE-G) **F 305**
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**
An Experimental Investigation of Heat Transfer Around A Tube in A Bank (76-HT-AAA) **HT 503**
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) **F 224**; (Er) **F 583**; (D) **F 583, 584**; (AC) **F 585**
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**
Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**
Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**
Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**
Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**
Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**
Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**
An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**
Irrotational Flow About Two Touching Spheres (BN) **AM 365**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**
Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**
Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**
Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**
Mixing and Reacting Flow Characterization (D) (AC) **F 136**
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**
The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**
Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature (TB) **F 323**
The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**
A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**
Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**
Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**
Potential Sluice Gate Flow With Generalized Boundaries (BN) **AM 368**
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flow (76-APM-16) **AM 13**
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**
Super Laminar Flow in Bearings—A Review of the Second Leeds-Lyon Symposium, Lyons, France, September 17–19, 1975 (FR) **L 5**
Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**
Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**
A Theoretical Study of Thermally Developing Fully Turbulent Boundary Layer Flow (TN) **HT 334**
Transonic Flow Around Rotor Blade Elements (D) (AC) **F 122**
The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**
Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**
Turbulent Mixing and Reacting Flow Characterization (Er) **F 198**
Two-Dimensional Method for Calculating Separated Flow in a Centrifugal Impeller (D) **F 333**; (AC) **F 335**
Two-Phase Flow Through Normal Shock Wave (D) (AC) **F 135**
A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**
Unsteady and Two-Dimensional Flow of a Condensate Film (TN) **HT 313**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**
Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**
Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**
Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**

Flow Analyses

Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**

Flow Characteristics

Parallel Porous Plate Channel Flow Characteristics Resulting from Nonuniform Entry Velocity Profiles (D) (AC) **F 125**

Flow Concentration

The Modeling of Flow Concentration in Two-Phase Materials (75-Mat-7) **MT 180**

Flow Conditions

Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Flow Control

Flow Control in Wide-Angled Conical Diffusers **F 728**

Flow Dependency

A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**

Flow Development

Flow Development in a Parallel Plate Channel (75-LubS-4) **L 145**; (D) **L 154, 155**; (AC) **L 156**

Flow Distribution

Flow Distribution Manifolds (76-FE-7) **F 654**; (D) **F 665**; (AC) **F 666**

Flow Fields

Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (TB) **F 320**
Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**
Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (75-GT-33) **P 247**; (D) **P 255, 256**; (AC) **P 257**
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**

Flow Fluids

Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**

Flow Interactions
Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**
Flow Investigations
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**
Flow Models
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**
Flow Oscillations
An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) **HT 616**
Flow Patterns
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**; (D) **I 1375**
Flow Pressures
Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**
Flow Regimes
Flow Regimes in Two-Dimensional Ribbed Diffusers (D) **F 126**; (AC) **F 127**
Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**; (D) (AC) **F 585**
Flow Resistance
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**
Flow Reversal
An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**
Flow Separation
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
Guide Vane Vibrations Caused by Wakes and Blower Noise—Part 2: Transferability From the Model to the Prototype (75-DET-61) **I 956**
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**
Flow Visualization
Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**
Flow-Induced Forces
Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves (TB) **DS 316**
Flowing Fluids
Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) **HT 471**
Flowing Medium
Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**
Flowmeters
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
Flow-Rate Measurements
Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe (TB) **F 562**
Flow-Through Reservoirs
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Fluctuating Inlet Conditions
Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**
Fluerenbrock, F. Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**; Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**
Flügge, S. *(editor)* Encyclopedia of Physics (BR) **AM 382**
Fluid Flow
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**
Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **L 214**; (D) (AC) **L 222**
Fluid Flow Devices
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**
Fluid Forces
Fluid Forces Induced by Vortex Shedding (75-FE-10) **F 19**; (D) **F 24, 25**; (AC) **F 25**
Fluid Inertia
Fluid Inertia Effects in Non-Newtonian Squeeze Films (76-Lub-J) **L 409**
Fluid Injection
Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**
Fluid Interfaces
Nonlinear Propagation of Wave-Packets on Fluid Interfaces (76-WA/APM-11) **AM 584**
Fluid Lines
Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**
Fluid Lubrication
JSLE-ASLE International Lubrication Conference—Tokyo, 1975 (FR) **L 353**
Fluid Mechanics
ASME Catalog of Motion Pictures of Research Data in Fluid Mechanics and Heat Transfer **F 151**
On Numerical Solution of the Three-Dimensional Vorticity Equation (TB) **F 770**
Perturbation Method in Fluid Mechanics (BR) **AM 189**
Statistical Fluid Mechanics, Vol. II (BR) **AM 521**
Fluid Media
Transient Response of Viscoplastic and Viscoelastic Shells Submerged in Fluid Media (76-APM-K) **AM 137**
Fluid Medium
Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (76-WA/APM-3) **AM 480**
Fluid Metering
Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**
Fluid Mixing
Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**
Fluid Power
Fluid Power Servomechanisms (BR) **DS 204**
Fluid Saturated Porous Media
Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**
Fluid Streams
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**
Fluid Surfaces
Active Sites in Boiling (76-HT-JJJ) **HT 401**
Fluid Suspensions
Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**
Fluid Temperature Distributions
Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**
Fluid Transmission Lines
A Transient Response Approximation for Noncircular Fluid Transmission Lines **F 244**
Fluid-Film Bearings
Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**
Fluid-Film Inertia
The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**
Fluid-Film Lubrication
The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**
Fluids
Added Mass and Damping of a Vibratory Rod in Confined Viscous Fluids (D) **AM 699**; (AC) **AM 700**
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**
Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**
On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**
Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) **AM 102**
The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) **AM 39**
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**
Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**
Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**
Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**
Natural Convection From a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) **HT 446**
A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**
An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**
Squeeze Film Theory for Micropolar Fluids (75-LubS-5) **L 139**; (D) **L 144**
The Squeezing of a Fluid Between Two Plates (76-WW/APM-14) **AM 579**
Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**
Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) **HT 471**
Fluids Engineering
Is There Any Fluids Engineering Challenge Left In Positive Displacement Machinery? (Op) **F 142**
Fluid-Solid Interfaces
Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Fluid-Structure Interactions
A General Principle in Dynamic Response of Fluid-Structure Interaction (BN) **AM 697**
Flyash Concentration
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**
Fly-Shuttle Looms
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Foam Cement
Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**
Following-Law Controllers
Emergency Control of Vehicle Platoons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**; System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**
Force
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**
Forced Convection
An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**
Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux (TN) **HT 523**
Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**
Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate (TB) **F 119**
Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**
Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**
Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**
Forced Vibrations
Computer Design of a Minimum Vibration Face Milling

Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**
Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Forces
Forces on Cylinders Near a Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**

Forged Gears
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**

Forging Parameters
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**

Forging Processes
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Formability Parameters
Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) **I 211**

Forrestal, M. J. Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Forster, L. L. Dry and Wet-peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**

Fouling
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**

Foundation Geometry
On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) **AM 300**

Four-Bar Linkages
Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) **I 788**
Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**
Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) **I 1183**
Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**

Fourdrinier Paper Machine
Identification of Papermaking Process From Closed Loop Data by Bivariate Time Series Analysis (76-Aut-MM) **DS 291**

Four-Layer Flow Models
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**

Four-Link Mechanisms
Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) **I 1260**

Fox, J. A. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 584**; (AC) **F 585**

Fractography
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**

Fracture
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) **I 206**
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**
Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**

Fracture Analysis
Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**
On the Use of Finite Elements in Fracture Analysis of Pressure Vessel Components (75-PVP-20) **PVT 8**

Fracture Assessment
An Examination of a Proposed Method for Evaluating Nonlinear Effects in Fracture Assessment (75-PVP-33) **PVT 40**

Fracture Criterion
An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**

Fracture Mechanics
Elastic-Plastic Analysis for Cracked Members (75-PVP-34) **PVT 47**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
The Role of Fracture Mechanics in Design Technology (76-DET-58) **I 1243**
Three-Dimensional Crack Problems (BR) **AM 522**
Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Fracture Strength
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Fracture Toughness
Elastic-Plastic Fracture Toughness—A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 81, 213**
Influence of Sulfur Content on the Fracture Toughness Properties of 2¼ Percent Cr-1 Percent Mo Steel **PVT 135**
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**

France, D. M. Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**

Francis, G. P. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Francis, H. A. Phenomenological Analysis of Plastic Spherical Indentation (76-Mat-V) **MT 272**

Frank, A. System Simulation by Computers (F) **DS 237**

Franke, M. E. Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**; A Transient Response Approximation for Noncircular Fluid Transmission Lines **F 244**

Free Convection
An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**
Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**
Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate (TB) **F 119**
Experimental Study of Free Convective Heat Transfer From Inclined Cylinders (TN) **HT 672**
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**
Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**
Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**
Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**
Locally Nonsimilar Solution for Laminar Free Convection Adjacent to a Vertical Wall (TN) **HT 321**
Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**

Free Convective Flows
Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**

Free Falling Drops
Heat and Mass Transfer From Freely Falling Drops (75-WA/HT-37) **HT 120**; (D) **HT 339**; (AC) **HT 340**

Free Jets
Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**

Free Stream Disturbances
A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (25-GT-34) **P 229**; (D) **P 238, 239**; (AC) **P 239**

Free Surface Water Tunnels
The Hydrodynamics Laboratory at the California Institute of Technology—1976 **F 740**

Free Vibration
Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (76-WA/APM-3) **AM 480**

Free Vibration Analysis
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**
Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**

Freeman, V. D. A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) **DS 63**

Free-Stream Turbulence
Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**
Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**
Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**; (D) **F 776**; (AC) **F 777**
Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**

Freestream Velocity Distribution
An Approximate Method for the Solution of a Class of Nonsimilar Laminar Boundary Layer Equations (75-FE-28) **F 292**

Free-Surface Cracks
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Freezing Probes
Thermal Aspects of Cryosurgery **HT 543**

Freezing Processes
"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**
Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**

Frequency Responses
The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**

Frequency-Domain Synthesis
Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
Frequency-Domain Synthesis of Optimal Inputs for Linear System Parameter Estimation (76-Aut-V) **DS 130**

Freudenstein, F. On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**; Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Part 2: Applications (76-DET-25) **I 1281**; Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**

Freund, L. B. Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**; Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (D) **PVT 323**; (AC) **PVT 324**

Freymuth, P. The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (D) (AC) **F 363**

Friction
Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**

Friction Area
Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Friction Dampers
Dynamics of a Power Collector With Friction Dampers (75-DET-30) **I 306**

Friction Factors
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**

Friction Grip
Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**

Frictional Heating
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

Frictional Interactions
Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**

Frictional Pressure Drop
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**

Frictional Sliding
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**

Frictionless Contact
Interface Separation in a Frictionless Contact Problem for an Elastic Layer (BN) **AM 175**

Friedman, M. Y. Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1:

Theory (75-Prod-4) I 481; (D) I 495; (AC) I 496; Part 2: Verification and Applications (75-Prod-5) I 487; (D) I 495; (AC) I 496

Friend, I. E. A Simple Model of Submarine Hoses in Single Point Moorings (BN) **AM 170**

Frint, H. K. A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (D) (AC) **L 425**

Frishmuth, R. E. Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**

Fritz, R. J. Added Mass and Damping of a Vibratory Rod in Confined Viscous Fluids (D) **AM 699**; (AC) **AM 700**

Frohrib, D. A. Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**; Vibration of an Asymmetrically Mounted Rotor With Gyroscopic Effects (75-DET-58) **I 327**

Frontal Gap

Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**

Frost, N. E. *(author)* Metal Fatigue (BR) **MT 96**

Fruehauf, H. H. Spatial Supersonic Flow Through Annular Cascades (75-GT-113) **P 274**

Fryba, L. *(author)* Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**

Fuel Costs

Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**

Fuel Elements

Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**

Fuel Impurities

High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

Fuel Injectors

Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**

Fuel Particles

Effect of Velocity Slip on the Burning Rate of Fuel Particles (Er) **F 363**

Fuel Prevaporization

Experimental Investigation of a New Concept of Fuel Prevaporization (75-GT-6) **P 305**

Fuel Pumps

Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**

Fuels

An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Coal Firing and Industrial Boiler Design—the Modern Approach (75-IPwr-14) **P 297**

A Diffusion Limited Model That Accurately Predicts the No_x Emissions From Gas Turbine Combustors Including the Use of Nitrogen Containing Fuels (75-Pwr-11) **P 320**

Fujii, S. Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (D) (AC) **F 172**; A Note on the Two-Dimensional Cylinder Wake (TB) **F 318**

Fujita, H. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**

Fujita, K. Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**

Fukusako, S. An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**; Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**

Fuller, A. T. The Early Development of Control Theory (AH) **DS 109**; II (AH) **DS 224**; *(editor)* Stability of Motion: A Collection of Early Scientific Papers by Routh, Clifford, Sturm and Bôcker (BR) **DS 205**

Fuller, D. D. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**

Fully Plastic Solutions

Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**

Functional Analysis

Design Problem Solving by Functional Analysis and Creativity (75-DET-121) **I 1069**

Fung, Y.-C. On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**

Furnace-Flow Properties

The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**

Furuya, Y. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**; Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (D) **F 780, 782**; (AC) **F 782**

G

Galate, J. W. Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**

Galetuse, S. Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**

Gangadharan, A. C. Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**

Gardner, K. A. Efficiency of Extended Surface (Er) **HT 34**

Gardner, W. W. Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (D) (AC) **L 80**; Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (D) **L 88**; (AC) **L 89**

Garg, D. P. Comprehension of Societal Impacts Via Technology Assessment (76-Aut-AA) **DS 56**; Guest Editorial **DS 1**

Gargiulo, E. P., Jr. A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings (TB) **L 187**

Garrison, P. W. Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**

Gartshore, I. S. The Suppression of Flow Separation by Sequential Wall Jets (D) **F 453**; (AC) **F 454**

Gas Analysis

Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**

Gas Bearings

Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**

On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**

Gas Bubbles

Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**

The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**

Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**

Gas Compressors

Performance of Hydraulic Gas Compressors (76-FE-5) **F 645**; (D) **F 652, 653**; (AC) **F 653**

Gas Flow

Similarity in Transient High Speed Gas Flow Through Porous Media (TB) **F 567**

Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**

Gas Gyro Bearings

Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Gas Journal Bearings

A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings (TB) **L 187**

Gas Mixtures

Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Gas Radiation

Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**

Gas Reservoirs

Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Gas Turbine Combustors

Combustion Generated Noise in Gas Turbine Combustors (75-GT-27) **P 242**

A Diffusion Limited Model That Accurately Predicts the No_x Emissions From Gas Turbine Combustors Including the Use of Nitrogen Containing Fuels (75-Pwr-11) **P 320**

Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**

Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**

The Vorbix Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**

Gas Turbine Engines

Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**

Multiple Jet Correlations for Gas Turbine Engine Combustor Design (75-GT-45) **P 265**; (D) **P 272**; (AC) **P 273**

Gas Turbines

Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**

High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**

Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**

Theoretically Estimating the Performance of Gas Turbines Under Varying Atmospheric Conditions (75-GT-115) **P 69**; (Er) **P 385**

Gaseous Oxidants

An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Gases

Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**

Radiation Heat Transfer Through Multiband Molecular Gases **HT 638**

Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**

Gas-Lubricated Bearings

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) **L 57**

Gas-Lubricated Damper

Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Gasser, R. D. Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**; (Er) **HT 302**

Gates, E. M. Effect of Polymer Additives on Jet Cavitation (D) **F 111**; (AC) **F 112**

Gauss' Principle

The Practical Use of Gauss' Principle of Least Constraint (76-APM-P) **AM 491**

Gaussian Circular Jets

Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**

Gauthier, R. D. Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**

Gay, C. W. Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**

Gdoutos, E. E. Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**

Gear Forging

A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**

Gear Pumps

Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) **I 1296**

Gear Tooth Stiffness

Epicyclic Gear Vibrations (75-DET-14) **I 811**

Gear Tooth Surface Distress

Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**

Gear Transmission System
Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**
Gears
Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (76-DE-Q) **I 397**; Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**
Gem Turboshaft Engine
Performance Development of the Gem Turboshaft Engine (75-GT-28) **P 114**
Gencsoy, H. T. Stress Concentration Factors From Overlapping Stress Fields in Uniaxial Tension (74-WA/DE-3) **I 332**
Generalized Coordinates
Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**
Generalized Plane Problems
Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**
Generator Shafts
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
Genin, J. Nonlinear Vibrations of Thin Cylinders (BN) **AM 370**; Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**
Gentle, C. R. A Critical Survey of High Pressure Lubricant Models (75-Lub-15) **L 258**; (D) **L 265, 266**; (AC) **L 266**; Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**
Geometric Optics
Propagation of a Shock Wave Front Across a Curved fluid-Solid Interface (76-WA/APM-9) **AM 589**
Geometric Programming
Optimal Design of a Class of Welded Structures Using Geometric Programming (75-DET-86) **I 1021**
Geometry
On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) **AM 300**
Geothermal Energy
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**
Gerbert, G. A Note on Slip in V-Belt Drives (TB) **I 1366**; V-Belt Life Prediction and Power Rating (D) (AC) **I 347**
German Flight Control
A Historical Review of Autopilot Development, Research, and Theory in Germany (AH) **DS 215**
German Language Literature
Review of Materials Processing Literature 1971–72—Part 3: Review of German Language Literature **I 19**
Gersch, W. Time Series Methods for the Synthesis of Random Vibration Systems (76-APM-A) **AM 159**
Gessner, F. B. The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**; A Reynolds Stress Model for Turbulent Corner Flows—Part I: Development of the Model (76-FE-C) **F 261**; Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**
Ghai, R. C. Load Capacity and Stiffness Considerations for Hydrostatic Journal Bearings (76-Lub-M) **L 629**
Ghista, D. N. Statistical Analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**
Giannotti, J. G. A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**
Gibson, E. J. Liquid Container Filling and Charging (TB) **I 730**
Gibson, J. E. Large-Scale Systems Methodology and Urban Revitalization (F) **DS 357**
Gibson, M. M. On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
Gillespie, L. K. The Formation and Properties of Machining Burrs (75-Prod-J) **I 66**
Gilpin, R. R. "Heat-Valve" Effects in the Ground Thermal REGIME **HT 537**
Girth Butt Welds
WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**
Gittus, J. *(author)* Creep, Viscoelasticity and Creep Fracture in Solids (BR) **MT 191**
Gittus, J. H. Development of Constitutive Relation for Plastic Deformation From a Dislocation Model (75-Mat-8) **MT 52**
Gladwell, G. M. L. On Some Unbonded Contact Problems in Plane Elasticity Theory (76-APM-W) **AM 263**
Glass
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**
Glassman, H. N. Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (TB) **F 320**
Gleed, A. R. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**; Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**
Glide Process
A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**
Goatham, J. I. Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**
Goel, B. S. A Numerical Study of Unsteady Laminar Forced Convection From a Circular Cylinder (76-HT-FF) **HT 303**
Goel, K. C. Mean Diameters in Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**
Goel, R. P. Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) **I 137**
Goh, T. N. Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**
Golden, L. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**
Goldschmidt, V. W. Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (D) **F 68**; (AC) **F 69**
Goldstein, L., Jr. Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**; Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**
Goldstein, R. J. Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**; Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**
Golebiewski, E. P. Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**
Golf Drive
Maximizing Distance of the Golf Drive: An Optimal Control Study (D) (AC) **DS 211**
Gomi, M. A Note on the Two-Dimensional Cylinder Wake (TB) **F 318**
Gonzalez-Santalo, J. M. Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**
Goodman, L. E. *(reviewer)* The Mechanics of the Contact Between Deformable Bodies (BR) **AM 701**; *(author)* Tangential Loading of Two Bodies in Contact (BN) **AM 513**
Goodwin, G. M. Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**
Gopalakrishman, S. Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (D) (AC) **F 442**
Gorla, R. S. R. Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**
Gorton, C. A. A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbo-machinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**
Gosman, A. D. The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**
Gostelow, J. P. Transonic Flow Around Rotor Blade Elements (D) (AC) **F 122**
Goto, T. Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**
Gotoh, M. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) **I 211**
Grabkowski, S. E. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**
Gradshteyn, I. S. *(author)* Table of Integrals, Series, and Products (BR) **L 479**
Graham, D. A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) **DS 63**
Grain Boundaries
Crack Initiation In Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**
Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) **I 360**
Grandt, A. F. Corner Crack at the Bore of a Rotating Disk (D) **P 470**; (AC) **P 472**
Granular Materials
Application of Spencer's Ideal Soil Model to Granular Material Flow (76-APM-5) **AM 49**
Granville, P. S. A Modified Law of the Wake for Turbulent Shear Layers (TB) **F 578**
Graphic Displays
Use of a Pragmatic Information Measure as an Aid in the Design of Interactive Graphic Displays (75-DET-88) **I 118**
Graphical Construction
Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 176**
Graphite Epoxy
In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**
Gravest Frequencies
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) **AM 345**
Gravitational Forces
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
Gravity Fractions
An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**
Greber, I. Laser-Doppler Measurements in a Subsonic Jet Injected into a Subsonic Cross Flow (D) (AC) **F 777**
Green, G. The Initiation and Propagation of Ductile Fracture in Low Strength Steels (75-Mat-10) **MT 37**
Greenhill's Formula
The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**
Green's Function
Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**
Gregoire, J. P. Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
Gregory, R. S. Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**; Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (D) **L 88**; (AC) **L 89**
Greif, R. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**; Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Greitzer, E. M. Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model (75-GT-9) **P 190**; (D) **P 212, 213**; (AC) **P 216**; Part II: Experimental Results and Comparison With Theory (75-GT-10) **P 199**; (D) **P 212–215**; (AC) **P 216**
Griffin, O. M. Fluid Forces Induced by Vortex Shedding (D) (AC) **F 25**; Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**
Griffis, C. A. Initial Crack Extension in Two Intermediate-Strength Aluminum Alloys (76-Mat-D) **MT 152**
Griffith Cracks
The Interaction of Collinear Arrays of Griffith Cracks on Two Radial Lines (75-DET-124) **I 1086**
Griffith, P. An Analysis of Critical Heat Flux in Flow

Reversal Transients (76-HT-TT) **HT 153**

Grinding
Review of Materials Processing Literature 1971–72—Part 2: Grinding **I 11**
Selection of Operating Parameters in Surface Grinding of Steels (75-Prod-G) **I 56**

Grinding Process
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Grinding Wheels
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) **I 189**

Grit
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) **I 189**

Grobner, P. J. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) **I 708**

Groover, M. P. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**

Grosjean, A. Statistical Weather Forecasting (76-Aut-A) **DS 49**

Gross National Product
Modeling and Optimization of Economic System in Socialist Countries (76-Aut-GG) **DS 252**

Ground Excitation
Identification of Structures Through Records Obtained During Strong Earthquake Ground Motion (75-DET-77) **I 1347**

Ground Thermal Regime
"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**

Ground Vortex
Ground Vortex—Limit to Engine/Reverser Operation (75-GT-3) **P 258**; (D) **P 263**; (AC) **P 264**

Gu, A. Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Guide Vane Vibrations
Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Prototype (75-DET-61) **I 956**

Guideways
Analytical Model for Guideway Surface Roughness **DS 425**

Gulya, J. A. Improved 2¼ Cr-1 Mo Pressure Vessel Steel Through Electroslag Remelting (76-Pet-1) **PVT 298**

Gun Projectiles
Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity (TB) **I 381**

Gunter, E. J. Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**; Short Bearing Analysis Applied to Rotor Dynamics—Part I: Theory (75-Lub-30) **L 47**; Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**; Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**

Gupta, B. K. Symmetrical Laminar Channel Flow With Wall Suction (76-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**

Gupta, G. D. Buckling Rules for Nuclear Components—Code Case 1592 **PVT 229**; Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**; Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**

Gupta, M. M. On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**

Gupta, N. K. Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**

Gupta, P. K. On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) **L 367**; (D) **L 373**; (AC) **L 374**; Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (D) (AC) **L 470**

Gupta, S. D. Elastoplastic Analysis of Space Framework: Initial Force Schemes (D) (AC) **PVT 87**

Gustafson, C-G Rotating Bending Fatigue Tests in a Hydrostatic Environment (TB) **MT 380**

Guy, A. W. The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Guymer, C. Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**

Gwaltney, R. C. Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**

Gyro Rotors
Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Gyroscopic Effects
Vibration of an Asymmetrically Mounted Rotor With Gyroscopic Effects (75-DET-58) **I 327**

Gyroscopic Moments
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**

Gyrostats
Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**

H

Habib, I. S. The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**

Haddow, J. B. Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**

Hagan, B. T. The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**

Hageniers, O. L. A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**

Hahn, E. J. Effect of Pressurization on the Vibration Isolation Capability of Squeeze Film Bearings (75-DET-70) **I 109**; (Er) **I 736**

Hahn, W. C., Jr. Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**; The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**

Hai, S. M. Flow Development in a Parallel Plate Channel (75-LubS-4) **L 145**; (D) **L 154, 155**; (AC) **L 156**; Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) **AM 13**

Haines, D. W. Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**; Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**

Half Planes
The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**
Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**

Half Space
The Dynamic Response of an Elastic Half Space With an Over-lying Acoustic Fluid (76-APM-2) **AM 39**
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**
Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**
Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) **AM 419**
Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) **AM 625**

Halford, G. R. Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**

Halite
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**

Halkias, J. E. Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**

Hall, R. E. The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Hall, W. E., Jr. Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**

Hallquist, J. O. On the Specification of Eigenvalues in Vibratory Systems (BN) **AM 359**

Ham, I. Effects of Built-Up Edge in Drilling (75-WA/Prod-17) **I 287**

Hamad, G. Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**

Hamed, A. Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**; Losses in Radial Inflow Turbines (76-FE-9) **F 364**; (D) **F 371, 372**; (AC) **F 372**

Hamilton, J. F. Stress Concentration Factors From Over-lapping Stress Fields in Uniaxial Tension (74-WA/DE-3) **I 332**

Hamilton, L. H. Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**

Hamilton's Principle
Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

Hammitt, F. G. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Hamrock, B. J. Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (75-Lub-11) **L 223**; (D) (AC) **L 228**; Part II—Ellipticity Parameter Results (75-Lub-12) **L 375**; (D) **L 381, 382**; (AC) **L 382**

Hanson, K. Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**

Hardening
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**

Hardening Rules
A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**

Hardening-Type Oscillators
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**

Hardware Design Failures
Design Problem Solving by Functional Analysis and Creativity (75-DET-121) **I 1069**

Hargreaves, R. A. Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (75-LubS-3) **L 66**; (D) **L 71, 72**; (AC) **L 72**

Harman, C. M. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) **F 224**; (Er) **F 583**

Harmonic Holes
Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**

Harmonic Oscillation
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion With Applications to Harmonic Oscillation (D) (AC) **F 778**

Harmonically Excited Response
Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

Harpole, G. M. Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**

Harris, J. E. Parallel Porous Plate Channel Flow Characteristics Resulting from Nonuniform Entry Velocity Profiles (D) (AC) **F 125**

Harris, L. R. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Harsha, P. T. Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (TB) **F 320**

Hart, E. W. Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**

Hart, F. D. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**

Hartley, J. G. Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**

Hartman, P. J. Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**

Hartnett *(editor)* Steam and Air Tables in SI Units (BR) **DS 108**

Hartnett, M. J. Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**

Harvey, D. W. Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**

Harvey, W. B. Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (D) **AM 699**

Hashemi, A. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Hatcher, J. D. A Program to Control the Hazard of the Dust From Cotton (75-Tex-A) **I 297**

Hati, S. K. Determination of Optimum Machining Conditions—Deterministic and Probabilistic Approaches (75-Prod-K) **I 354**

Haurie, A. Further Aspects of Turnpike Theory in Continuous Time With Applications (76-Aut-X) **DS 85**

Hawley, R. H. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**

Hawthorne, J. R. Further Observations on A533-B Steel Plate Tailored for Improved Radiation Embrittlement Resistance **PVT 111**

Hayami, H. An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**

Hayashi, Y. Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**

Hays, D. F. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (D) **L 204**; (AC) **L 205**; *(reviewer)* Handbook of Mathematical Formulas (BR) **L 349**; *(reviewer)* Table of Integrals, Series, and Products (BR) **L 479**

Headwave

Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**

Healey, A. J. Price Level Stabilization Experiments Using the Dynamic Phillips Curve Concept (76-Aut-T) **DS 68**

Health

The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) **I 761**

Heat Balance Integral Method

The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**

Heat Conduction

Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**

The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**

Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (TN) **HT 525**

Heat Dissipation Technique

Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**

Heat Exchangers

Analysis of Large Dry Cooling Towers With Power-Law Heat Exchanger Performance (75-WA/HT-46) **HT 345**

Experiments on a Three-Row Fin and Tube Heat Exchanger (TN) **HT 520**

Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**

Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**

Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) **I 1157**

Heat Flow

The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**

Heat Flux

An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**

Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux (TN) **HT 523**

Heat Generation

Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**

Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**; (Er) **HT 302**

Heat Pipes

Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**

Heat Storage Units

Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) **HT 471**

Heat Tinting Techniques

Initial Crack Extension in Two Intermediate-Strength Aluminum Alloys (76-Mat-D) **MT 152**

Heat Transfer

An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**

An Analysis of Heat Transfer and Fade in Disk Brakes (75-DE-A) **I 385**

An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**

ASME Catalog of Motion Pictures of Research Data in Fluid Mechanics and Heat Transfer **F 151**

Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**

Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**

Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**

An Experimental Investigation of Heat Transfer Around A Tube in A Bank (76-HT-AAA) **HT 503**

Experimental Study of Free Convective Heat Transfer From Inclined Cylinders (TN) **HT 672**

Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**

Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**

Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**

Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**

Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**

Heat and Mass Transfer From Freely Falling Drops (75-WA/HT-37) **HT 120**; (D) **HT 339**; (AC) **HT 340**

Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**

Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 257**

Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**

Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**

Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**

The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**

Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**

Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**

A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**

The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**

A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**

Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**

Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**

Radiation Heat Transfer Through Multiband Molecular Gases **HT 638**

Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

A Study of Transient Heat Transfer in Long Insulated Wires (76-HT-U) **HT 127**

Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**

Heat Transport

On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**

An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**

Heat Treatment

Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**

Heat Valves

"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**

Heat Variations

Heat-to-Heat Variation in Creep Properties of Types 304 and 316 Stainless Steels (D) **PVT 85**; (AC) **PVT 86**

Heat-Affected Zone Cracking

Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**

Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Heated Air Jets

Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**

Heated Surface Jets

Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**

Heater Size

The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (Er) **HT 513**

Heating

Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**

The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**

Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**

On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**

Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating (TN) **HT 678**

Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**

Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**

Heating Systems

Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**

Heat-Sink System

Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**

Hebble, T. L. A Mathematical Description for the Stress-Strain Behavior of Annealed 2¼ Cr-1 Mo Steel **PVT 118**

Heckmann, S. R. Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**; Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (D) **L 284**; (AC) **L 285**

Hegemier, G. A. A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**

Heiser, W. A Separated and Reattached Flow on a Blunt Flat Plate (D) **F 84**; (AC) **F 86**

Helical Gears

Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**

Helices

Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**

Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**

Hemokinetic Ball Joints
On the Theory of the Calculation of the Constant Velocity Ball Transmission Joints (75-DE-H) **I 852**
Henriksen, R. Simulation of Market Price Formation as a Game Between Stochastic Automata (76-Aut-Z) **DS 91**
Henson, D. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 584**; (AC) **F 585**
Herman, H. *(author)* Treatise on Materials Science and Technology (BR) **AM 384**
Herring, H. J. Fluid Mixing With Unequal Free-Stream Turbulence Intensitites (D) (AC) **F 235**; Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (D) (AC) **F 381**
Herrmann, G. Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**; The Dynamic Response of an Elastic Half Space With an Overlying Acoustic Fluid (76-APM-2) **AM 39**; Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Heskestad, G. Comprehensive Design of Axisymmetric Wind Tunnel Contractions (D) **F 131**; (AC) **F 132**
Hesse, G. Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**
Heterogeneous Shell Structures
Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**
Hetsroni, G. Velocity Distribution in Semiopen Channels (TB) **F 764**
Heuristic Algorithms
Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Part 2: Applications (76-DET-25) **I 1281**
Heydlauff, E. P. The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**
Heymann, F. J. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (D) **P 499**; (AC) **P 500**
Hibner, D. H. A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**; (Er) **I 1329**
Hickling, R. The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (D) **F 486**; (AC) **F 487**
Hickman, K. E. Flow Regimes in Two-Dimensional Ribbed Diffusers (D) **F 126**; (AC) **F 127**
Higginson, G. R. Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (75-LubS-3) **L 66**; (D) **L 71, 72**; (AC) **L 72**
High Operating Speeds
Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**
Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**
High Pressure Service
Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) **PVT 266**
High Speed Water Tunnels
The Hydrodynamics Laboratory at the California Institute of Technology—1976 **F 740**
High-Alumina Cement
High-Alumina Cement Concrete (BR) **MT 191**
High-Speed Mechanisms
Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) **I 788**
High-Speed Reclosing
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
High-Temperature Deformation
Some New Approaches in the Analysis of High-Temperature Deformation (76-Mat-F) **MT 2**
Hilton, P. D. Elastic-Plastic Analysis for Cracked Members (75-PVP-34) **PVT 47**
Hiraiwa, Y. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**
Hiranprueck, T. The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**
Hirata, T. Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**
Hirsch, Ch. A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**
Hizume, A. Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
Hlavac, P. J. Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**
Ho, C.-H. Stress-Focusing Effect in a Uniformly Heated Cylindrical Rod (76-APM-Z) **AM 464**
Ho, K. T. A. A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**
Ho, R. C. C. Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Hoberock, L. L. An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**; Emergency Control of Vehicle Platoons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**; System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**; Round Three: Industrial Participation in the ACD (F) **DS 236**
Hockling
The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**
Hoff, N. J. Creep Buckling of Imperfect Columns (D) (AC) **AM 519**
Hoffman, A. H. Liquid Jet Pumped by Rising Gas Bubbles (D) (AC) **F 57**
Hoffman, J. D. Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (D) **P 363**; (AC) **P 364**
Hoge, H. J. Choking and Mixing of Two Compressible Fluid Streams (D) (AC) **F 317**
Hoisting Mechanisms
Failure Analysis of a Redundant Reeving Hoist (76-DE-21) **I 1166**
Holdeman, J. D. Multiple Jet Correlations for Gas Turbine Engine Combustor Design (D) **P 272**; (AC) **P 273**
Hole Machining
On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**
Holes
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Holl, J. W. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (D) (AC) **F 467**
Hollands, K. G. T. Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**; Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**; Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**; Mean Diameters in Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**
Hollands, K. T. G. Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**
Holonomic Systems
Bond Graphs for Nonholonomic Dynamic Systems (76-WA/Aut-3) **DS 361**
Hollow Cylinders
Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**
Hollow Glass Microspheres
Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**
Holloway, G. A. Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**
Holography
Holographic Nondestructive Testing (BR) **AM 523**
Optical Holography (BR) **AM 523**
Homologous Serum
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**
Honeycombs
Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**
Hong, S. W. Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**; Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**
Honors and Awards
ASLE National Award, 1975
Klaus, E. E.*(recipient)* **L 480**
Horgan, C. O. Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**
Horizontal Circular Cylinders
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
Horizontal Cylinders
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**
Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**
Horizontal Flow
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
Horizontal Layers
The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**
Horizontal Milling Machines
Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**
Horizontal Pipes
Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**
Horizontal Tubes
Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**
Horlock, J. H. Alan Hugh Stenning—1928–1973—Distinguished Engineer **F 607**
Hornbeck, R. W. An Analysis of Heat Transfer and Fade in Disk Brakes (75-DE-A) **I 385**
Hosny, W. Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**
Hot Film Needles
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Hot Gas Streams
The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**
Hot Patch Data
A Correction to Noncircular Duct Hot Patch Data (TN) **HT 332**
Hot Spot Heating
Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**
Hot-Wire Anemometers
Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**
Direct Measurement of the Mean Flow Velocity Vector **F 736**
A Simple Linearized Hot-Wire Anemometer **F 749**
Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**
Hot-Wire Measurements
Shear Effects in Hot-Wire Measurements (TB) **F 771**
Hot Wires
Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**
Houtman, J. L. Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) **I 369**
Howard, J. H. G. Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 400**; (AC) **F 401**
Howell, J. P. Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**
Howes, M. A. H. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**
Hoyt, J. W. Effect of Polymer Additives on Jet Cavitation (76-FE-A) **F 106**; (D) **F 111**; (AC) **F 112**
Hsieh, T. C. Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Hsing, F. C. A Numerical Procedure for Designing Profiled Rolling Elements (D) (AC) **L 552**

Hsu, C. C. Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (D) **F 103**; (AC) **F 104**

Hsu, T. R. On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) **AM 117**; Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**

Hsu, Y. W. Effect of Nonuniform Residual Bending Stresses on Postleveled Sheet Flatness (75-WA/Prod-2) **I 196**

Huang, C. C. Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Huang, H. C. Minimum-Weight Design of Vibrating Elastic Structures With Dynamic Deflection Constraint (BN) **AM 178**

Huang, L. M. The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**

Huang, N. C. Creep Buckling of Imperfect Columns (76-APM-10) **AM 131**

Huang, T. C. Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**; Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Hubbard, G. L. Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Hubbard, M. Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**

Hubs

Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Huebner, K. H. Application of Finite Element Methods to Lubrication: An Engineering Approach (Er) **L 39**

Huerta, M. Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Hughes, P. J. Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**

Huilgol, R. R. *(author)* Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**

Hull, M. L. A Preliminary Analysis of Ski Release Binding Dynamic Properties (76-Aut-BB) **DS 301**

Hullender, D. A. Analytical Model for Guideway Surface Roughness **DS 425**

Hulls

NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) **I 537**

Human Control Tasks

The Human Operator in Manual Preview Tracking (an Experiment and Its Modeling Via Optimal Control) **DS 407**

Human Factors

An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**

The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Human Head

An Experimental Study of Package Cushioning for the Human Head **AM 469**; (Er) **AM 702**

Human Skeletal Muscles

Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**

Hung, N. M. Further Aspects of Turnpike Theory in Continuous Time With Applications (76-Aut-X) **DS 85**

Hung, W. S. Y. A Diffusion Limited Model That Accurately Predicts the NO_x Emissions From Gas Turbine Combustors Including the Use of Nitrogen Containing Fuels (75-Pwr-11) **P 320**

Hunsaker, B., Jr. A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**

Hunt, D. A. A General Principle in Dynamic Response of Fluid-Structure Interaction (BN) **AM 697**

Hunt, K. H. Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**

Huo, S. A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (D) **P 238**; (AC) **P 239**

Hurdis, D. A. Observations of Wave Motion and Upstream Influence in a Stratified Fluid (76-APM-Q) **AM 222**

Hurtt, J. H. An Evaluation of the Material Capabilities of Low Carbon 2¼ Cr-1 Mo Steel Forgings (76-Pet-40) **PVT 316**

Huseyin, K. *(author)* Nonlinear Theory of Elastic Stability (BR) **AM 521**

Hussain, A. K. M. F. Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**; Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**; Oscillating Turbulent Flow in a Conical Diffuser (D) **F 700**; (AC) **F 701**

Hussain, N. A. Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**

Hussaini, M. Y. The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**

Hutchinson, J. W. Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress (76-Mat-P) **MT 289**; *(reviewer)* An Introduction to the Elastic Stability of Structures (BR) **AM 383**

Hutchinson, P. The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**

Hwang, K. S. A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Hybrid Journal Bearings

On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) **L 90**

Hybrid Thrust Bearings

Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**

Hydraulic Gas Compressors

Performance of Hydraulic Gas Compressors (76-FE-5) **F 645**; (D) **F 652, 653**; (AC) **F 653**

Hydraulic Networks

Optimal Selection of Pumps in an Hydraulic Network (75-FE-21) **F 2**

Hydraulic Systems

The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**

Hydrodynamic Bearings

A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings (TB) **L 187**

Hydrodynamic Impact

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Hydrodynamic Lubrication

The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**

Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) **L 27**

A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) **L 426**; (D) **L 431, 432**; (AC) **L 432**

A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342**; (AC) **L 343**

Hydrodynamic Machinery

Cavitation in Relation to the Design and Operation of Hydrodynamic Machinery (Op) **F 590**

Hydrodynamic Pressure

Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**

Hydrodynamics

Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**

Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**

The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**

Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Hydrodynamics Laboratory

The Hydrodynamics Laboratory at the California Institute of Technology—1976 **F 740**

Hydrofoil Stability

Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**

Hydrogen Bubbles Visualization

Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**

Hydrogen-Induced Cracking

Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**

Hydrogen Sulfide

Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**

Hydromagnetics

Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**

Hydrostatic Bearings

Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Hydrostatic Extrusion

The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**; (D) **I 1375**

An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**

Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) **L 27**

Rotating Bending Fatigue Tests in a Hydrostatic Environment (TB) **MT 380**

A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342**; (AC) **L 343**

Hydrostatic Journal Bearings

Load Capacity and Stiffness Considerations for Hydrostatic Journal Bearings (76-Lub-M) **L 629**

Hydrostatic Pressure

The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**

Hygrocysts

An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**

Hyperbolic Distributed Systems

Transfer Functions of Hyperbolic Distributed Parameter Systems (TB) **DS 318**

Hysteresis

The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**

I

Ibele, W. E. Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**

Ibrahim, R. A. Multiple-Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**

Idealized Crystal

Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**

Identically Located Sensor & Manipulator

Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**

Ignition

An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Ikeda, A. Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**

Ileri, A. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**

Iliac Bifurcation

Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Impact Analysis

Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) **P 480**

Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**

Impact Loads

A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**

Impact Resistance

A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**

Impellers

An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**

Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**

Imperfect Columns
Creep Buckling of Imperfect Columns (D) (AC) **AM 519**
Impingement
Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**
Impingement Cooled Systems
Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade (TB) **P 554**
Impinging Jets
Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**
Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**
Impulse Loads
Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**
Impulse Response
On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) **AM 300**
In Vivo Freezing
Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (76-HT-FP) **HT 514**
Inclined Cylinders
Experimental Study of Free Convective Heat Transfer From Inclined Cylinders (TN) **HT 672**
Incompressibility
Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**
Incompressible Flow Capacity
Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**
Incompressible Fluids
Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**
Incompressible Liquids
Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**
Incompressible Flow
The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**
Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Incompressible Fluids
Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**
A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 766**
Incompressible Newtonian Fluids
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**
Incompressible Viscous Fluids
A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**
Indentation Hardness
Phenomenological Analysis of Plastic Spherical Indentation (76-Mat-V) **MT 272**
Induced Forces
Accelerated Diffusion Bonding Using Induced Forces (75-GT-36) **P 65**
Inducers
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**
Industrial Boiler Design
Coal Firing and Industrial Boiler Design—the Modern Approach (75-IPwr-14) **P 297**
Industrial Gear Drives
Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**
Industrial Power Rates
Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**
Industrial Processes
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**
Industrial Wastes
Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**
Industrialization
Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**
Inelastic Code Criteria
Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (75-PVP-31) **PVT 33**; (D) **PVT 45**; (AC) **PVT 46**
Inelastic Constitutive Models
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Inelastic Response
Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**
Inelastic Strain
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**
Inert Gas Bubbles
Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Inertia
Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**
Inertia Coefficients
Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**
Inertia Effects
A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings (TB) **L 187**
Inertia Forces
Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**
Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**
Inertia Measuring Platform
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**
Inertial Waves
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**
Inextensional Deformation
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) **AM 69**
Infant Mortality
Machine Life Expectation (75-DE-L) **I 862**
Infinite Determinants
A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) **AM 349**
Infinite Strip
Surface Integral Method Applied to the Problems of an Elastic Strip With Periodically Spaced Holes (76-APM-NN) **AM 599**
Infinity
Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**
Inflation Rates
Price Level Stabilization Experiments Using the Dynamic Phillips Curve Concept (76-Aut-T) **DS 68**
Inflow
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Influence Coefficient Method
Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**
Infrared Spectroscopy
Infrared Emission Spectra of Elastohydrodynamic Contacts (75-LUB-10) **L 230**
Initial Curvature
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**
Initial Force Schemes
Elastoplastic Analysis of Space Framework: Initial Force Schemes (D) (AC) **PVT 87**
Injection
Film Cooling With Injection Through Slots (TB) **P 556**
Inlet Conditions
Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**
Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**; (D) (AC) **F 585**
Inlet Turbulence
Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**
Inlet Zone Analysis
On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) **L 367**; (D) **L 373**; (AC) **L 374**
Inoyama, T. Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**
In-Phase Motion
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion With Applications to Harmonic Oscillation (D) (AC) **F 778**
In-Plane Impact
In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**
In-Plane Vibration
Epicyclic Gear Vibrations (75-DET-14) **I 811**
In-Process Analysis
In-Process Analysis of Machine Tool Structure Dynamics and Prediction of Machining Chatter (75-DET-20) **I 301**
Input Design
Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
Instability
Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**
Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**
Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**
Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**
Physical Interpretations of the Instabilities Encountered in the Deflection Equations of the Unconstrained Pipeline (75-Pet-1) **I 1099**
Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**
Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**
Instrument Ball Bearings
Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**
Instrument Readings
Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) **P 386**; (D) (AC) **P 392**
Instrumental Procedures
Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**
Insulated Bodies
On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**
Insulated Crack
Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**
Insulated Wires
A Study of Transient Heat Transfer in Long Insulated Wires (76-HT-U) **HT 127**
Insulating Materials
Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**

Insulation
Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss (TN) **HT 150**
Integral Entrainment Computation
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**
Integral Solutions
Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**
Integral Transform Methods
Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**
Integrals
Table of Integrals, Series, and Products (BR) **L 479**
Interacting Element Cycles
Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**
Interactive Graphic Displays
Use of a Pragmatic Information Measure as an Aid in the Design of Interactive Graphic Displays (75-DET-88) **I 118**
Interface Boundary Conditions
The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**
Interface Curvatures
Transient Melting of a Solid Heated by a Condensing Saturate Vapor—Case 1: Negligible Interface Curvature (Er) **HT 143**
Interface Separation
Interface Separation in a Frictionless Contact Problem for an Elastic Layer (BN) **AM 175**
Interfaces
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**
Interference Fits
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Intergranular Cracks
Crack Initiation In Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**
Interior Subchannels
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**
Intermediate Heat Exchanger
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**
Internal Combustion Engines
Theoretically Estimating the Performance of Gas Turbines Under Varying Atmospheric Conditions (75-GT-115) **P 69**
Internal Fins
Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 257**
Internal Gear Pumps
Reduction of the Contact Stress in Internal Gear Pumps (76-DET-40) **I 1296**
Internal Hygrocysts
An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**
Internal Inputs
Transfer Functions of Hyperbolic Distributed Parameter Systems (TB) **DS 318**
Internal Resonance
Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**
International Bibliographies
International Bibliographies **DS 104**; **DS 200**; **DS 348**; **DS 444**
Interpolation
Some Aspects of Computer Numerical Control With Reference to Interpolation (75-Prod-L) **I 883**
Inviscid Approximations
Inviscid Approximations for Wall Jet-Receiver Interaction (D) (AC) **F 126**
Inviscid Effects
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) **F 163**; (D) (AC) **F 172**
Inviscid Liquids
The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**
Irradiation
Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**
Irradiation Effects
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**
Irregular Cavities
Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
Irregular Shapes
Determination of Configuration Factors of Irregular Shape (TN) **HT 311**
Irrotational Flow
Irrotational Flow About Two Touching Spheres (BN) **AM 365**
Irvine *(editor)* Steam and Air Tables in SI Units (BR) **DS 108**
Irwin, A. S. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 561**; (AC) **L 563**
Iscovici, S. Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**
Ishihara, H. The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**
Ishii, M. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) **HT 616**
Islam, O. Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**
Isodamage Lines
A Cumulative Damage Rule Based on the Knee Point of the S-N Curve (76-Mat-E) **MT 316**
Isothermal Elastohydrodynamic Lubrication
Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (75-Lub-11) **L 223**; (D) (AC) **L 228**
Isothermal Flow
Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**
The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**
Isothermal Spheroids
Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**
Isotropic Cores
Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**
Isotropic Hardening
A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**
Isotropic Solids
Point Force Solution for an Infinite Transversely Isotropic Solid (76-WA/APM-18) **AM 608**
Isoviscous Lubricants
The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**
Issid, N. T. Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
Itasaka, M. A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Itou, S. Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**
Ives, K. D. *(recipient)* Materials Division Best Paper Award **MT 1**
Iwaki, T. Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Iwan, W. D. The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) **AM 485**
Iwata, K. In-Process Analysis of Machine Tool Structure Dynamics and Prediction of Machining Chatter (75-DET-20) **I 301**
Iwata, Y. Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
Iwatsubo, T. Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**

J

Jackson, A. J. B. Some Future Trends in Aero Engine Design for Subsonic Transport Aircraft (75-GT-2) **P 281**
Jackson, C. Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 2: Balancing (D) (AC) **P 188**
Jackson, D. F. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**
Jahsman, W. E. Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**
Jain, P. C. A Numerical Study of Unsteady Laminar Forced Convection From a Circular Cylinder (76-HT-FF) **HT 303**
Jain, R. K. Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**
Jaisingh, G. H. Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**
Jakub, M. T. New Rules for Construction of Section III, Class 1 Components for Elevated Temperature Service **PVT 214**
Jaluria, Y. A Study of Transient Heat Transfer in Long Insulated Wires (76-HT-U) **HT 127**; Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating (TN) **HT 678**
James, L. A. Some Questions Regarding the Interaction of Creep and Fatigue (75-WA/Mat-6) **MT 235**
Jamison, W. E. Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**
Janarthanan, G. Estimation of Fatigue Limit of Steel Subjected to Bending Loads (TB) **MT 381**
Jankowski, D. F. The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**
Japanese Language Literature
Review of Materials Processing Literature 1971–72—Part 4: Review of Japanese Language Literature, 1972 **I 26**
Japikse, D. Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 399**; (AC) **F 401**; A Finite-Element Method for Through Flow Calculations in Turbomachines (D) **F 414**; (AC) **F 419**; REVIEW—Progress in Numerical Turbomachinery Analysis **F 592**; Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (D) **F 441**; (AC) **F 442**
Javornicky, J. *(author)* Photoplasticity (BR) **AM 383**
Jayadev, T. S. Wind-Powered Electric Utility Plants (75-WA/Pet-1) **I 293**
Jeelani, S. Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Jendrzejczyk, J. A. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**
Jenkins, P. E. Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**
Jet Cavitation
Effect of Polymer Additives on Jet Cavitation (76-FE-A) **F 106**; (D) **F 111**; (AC) **F 112**
Jet Correlations
Multiple Jet Correlations for Gas Turbine Engine Combustor Design (75-GT-45) **P 265**; (D) **P 272**; (AC) **P 273**
Jet Engine Bearings
Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10^6 DN (76-LubS-16) **L 580**
Jet Engines
A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) **I 876**
A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**
Jet Lubrication
Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**
Jet Mixing
Prediction of Swirl and Inlet Turbulence Kinetic Energy

Effects on Confined Jet Mixing (D) F 123; (AC) F 125

Jet Noise

"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Jet Orifice

Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**

Jet Region

Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**

Jet Trajectories

Laser-Doppler Measurements in a Subsonic Jet Injected into a Subsonic Cross Flow (D) (AC) **F 777**

Jet Velocity

A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 766**

Jet Velocity Profiles

Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**

Jet Wake Interactions

Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**

Jetter, R. I. Elevated Temperature Design—Development and Implementation of Code Case 1592 **PVT 222**

J-Integral

Elastic-Plastic Fracture Toughness—A Comparison of J-Integral and Crack Opening Displacement Characterizations (D) (AC) **PVT 81**

Jofriet, J. C. The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**

Johnson, B. M. Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (D) **P 347**; (AC) **P 348**

Johnson, C. O. V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**

Johnson, G. R. Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Johnson, R. E. Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Johnson, R. L. *(contributor)* List of Theses Topics in Tribology—II: Seals (76-Lub-G) **L 398**

Johnson, R. O. Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

Johnson, R. W. Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**

Johnson, S. H. *(reviewer)* The Origins of Feeback Control (BR) **DS 204**; *(reviewer)* Stability of Motion: A Collection of Early Scientific Papers by Routh, Clifford, Sturm and Böcker (BR) **DS 205**

Johnston, J. P. Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**; Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

Johnston, S. C. Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Johnston's Triangular Model

A Note on the Peak of Johnston's Triangular Model in Three-Dimensional Turbulent Boundary Layers (TB) **F 577**

Joint Leakage

The Effect of Casing Wear on the Burst Strength of Casing—Part 1: Joint Leakage (75-Pet-11) **I 681**

Joint Stiffness

Determination of Joint Stiffness in Bolted Connections (75-DE-J) **I 858**

Jones, D. A. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**

Jones, D. L. Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (D) **PVT 45**; (AC) **PVT 46**

Jones, E. H., Jr. Flow Distribution Manifolds (76-FE-7) **F 654**; (D) **F 665**; (AC) **F 666**

Jones, L. H. On The Use of The Extreme Value Distribution in Reliability Analysis and Design (75-DET-123) **I 1080**

Jones, N. Creep Buckling of a Complete Spherical Shell (76-WA/APM-8) **AM 450**; Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**; Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**

Jones, O. C., Jr. An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**

Joseph, D. D. *(reviewer)* Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**

Jotwani, M. M. Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

Journal Bearings

Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**

Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**

On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) **L 90**

Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**

Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

Leakage-Free Journal Bearings (76-Lub-F) **L 441**

Load Capacity and Stiffness Considerations for Hydrostatic Journal Bearings (76-Lub-M) **L 629**

Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Short Bearing Analysis Applied to Rotor Dynamics—Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**

Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**

Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**

Journal Gas Bearings

A Nonlinear-PH Method of Solution for Journal Gas Bearings (76-Lub-K) **L 613**

Judd, R. L. A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Juhasz, A. J. Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (D) **F 242**; (AC) **F 243**

Junction Structures

The Properties of Bond Graph Junction Structures (D) **DS 209**; (AC) **DS 210**

Jury Arrays

System Stability by Improved Routh and Jury Arrays **DS 206**

K

Kadambi, V. *(reviewer)* Steam and Air Tables in SI Units (BR) **DS 108**

Kaftanoğlu, B. Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**

Kahles, J. F. Surface Integrity in Machining AISI 4340 Steel (D) (AC) **I 1007**

Kahng, C. H. The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**; Review of Materials Processing Literature 1971–72—Part 4: Review of Japanese Language Literature, 1972 **I 26**

Kahr, J. C. Hot Spot Heating by Composition Shoes (D) **I 457**; (AC) **I 458**

Kakarala, C. R. A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**

Kalker, J. J. *(editor)* The Mechanics of the Contact Between Deformable Bodies (BR) **AM 701**

Kalman Filtering Method

The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Kamotani, Y. Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**

Kanbe, M. Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**

Kanbe, Y. Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**

Kane, T. R. Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**

Kannel, J. W. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**; Prediction of Traction in Sliding EHD Contacts (D) **L 365**; (AC) **L 366**

Kanninen, M. F. Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**

Kao, T.-I. Locally Nonsimilar Solution for Laminar Free Convection Adjacent to a Vertical Wall (TN) **HT 321**

Kappler, G. Experimental Investigation of a New Concept of Fuel Prevaporation (75-GT-6) **P 305**

Karam, J. T., Jr. A Transient Response Approximation for Noncircular Fluid Transmission Lines **F 244**

Karnopp, D. Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**; Sensible State Variables **DS 353**

Karweit, M. An Experimental Study of Internal Hygrocysts (D) **F 692**; (AC) **F 693**

Kassir, M. K. Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**; *(author)* Three-Dimensional Crack Problems (BR) **AM 522** (BR) **AM 522**

Kastner, L. J. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (D) (AC) **P 59**

Kasza, K. E. Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**

Kato, S. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**

Katsanis, T. Losses in Radial Inflow Turbines (D) (AC) **F 372**

Katz, E. M. Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Katz, Z. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 246**

Kauzlarich, J. J. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion (D) **L 522**; (AC) **L 523**; Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

Kavanagh, P. Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356**; (D) **P 363**; (AC) **P 364**

Kawai, N. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) **I 211**

Kawashima, K. On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**

Kazimi, M. S. Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**; (Er) **HT 302**

Kececioglu, D. B. Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**

Kee, R. J. Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**

Keer, L. M. Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**; Tangential Loading of Two Bodies in Contact (BN) **AM 513**

Keffer, J. F. Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (D) (AC) **F 673**

Keith, R. M., Jr. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**

Keller, A. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Kelley, B. W. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**

Kemp, N. H. Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**

Kenyon, D. E. Transient Filtration in a Porous Elastic

Cylinder (76-WA/APM-16) **AM 594**

Kerlin, T. W. Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Keswani, K. K. Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

Khalil, E. E. The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**

Khalil, I. M. Losses in Radial Inflow Turbines (76-FE-9) **F 364**; (D) **F 371, 372**; (AC) **F 372**

Khorzad, N. Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Kilaparti, S. R. Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**; Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

Kim, C. B. Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**

Kim, C. S. An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Kimball, D. E. Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) **P 386**; (D) (AC) **P 392**

Kind, R. J. The Suppression of Flow Separation by Sequential Wall Jets (D) **F 453**; (AC) **F 454**

Kinematic Hardening

A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**

Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**

Kinematic Synthesis

Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Part 2: Applications (76-DET-25) **I 1281**

Kinetic Analysis

Modeling of Enzyme Reaction Kinetics (76-Aut-EE) **DS 266**

Kinetic Energy

Angular Momentum, Kinetic Energy, and Generalized Inertia Forces for a Gyrostat (BN) **AM 515**

Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**

Kinetics

Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**

Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**

King Liu, Y. An Experimental Study of Package Cushioning for the Human Head (Er) **AM 702**

King, R. I. Product Design Implications of New High-Speed Milling Techniques (76-DE-22) **I 1170**

King, R. T. Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**

Kingsbury, E. P. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (D) (AC) **L 249**

Kipp, R. M. Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**

Kirchhoff, R. H. Direct Measurement of the Mean Flow Velocity Vector **F 736**

Kirk, J. A. An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WAProd-1) **I 189**

Kirk, R. G. Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (D) (AC) **I 513**; A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**; (Er) **I 1329**; Short Bearing Analysis Applied to Rotor Dynamics—Part I: Theory (75-Lub-30) **L 47**; Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**; Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**

Kirkhope, J. Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**

Kirschey, G. Experimental Investigation of a New Concept of Fuel Prevaporization (75-GT-6) **P 305**

Kiser, K. M. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Klaus, E. E. *(recipient)* ASLE National Award, 1975 **L 480**; Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**; *(contributor)* List of Theses Topics in Tribology—II: Lubricant Properties (76-Lub-G) **L 393**

Klein, S. A. Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**

Klemm, J. L. The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) **AM 59**

Kleppe, J. Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate (TB) **F 119**

Kline, S. J. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (D) **F 351**; (AC) **F 352**

Klueh, R. L. High Strain Rate Tensile Properties of Annealed 2¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**; A Mathematical Description for the Stress-Strain Behavior of Annealed 2¼ Cr-1 Mo Steel **PVT 118**

Knebel, M. E. Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) **F 199**; (D) **F 206**; (AC) **F 207**

Knecht, R. L. Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**

Knight, C. E., Jr. Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**

Knight, C. J. A Variational Formulation of the Compressible Throughflow Problem (75-GT-32) **P 1**

Knott, J. F. The Initiation and Propagation of Ductile Fracture in Low Strength Steels (75-Mat-10) **MT 37**

Knuckle Boom Cranes

Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) **I 1183**

Knudsen Number

Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**

Kobayashi, A. S. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**; Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**

Kobayashi, K. Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**

Kobayashi, S. Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**; Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Koch, C. C. Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) **P 411**

Kocks, U. F. Laws for Work-Hardening and Low-Temperature Creep **MT 76**; A Recovery-Athermal Glide Creep Model (D) **MT 121**; (AC) **MT 122**

Kodnir, D. S. An Investigation in the Field of Elastohydrodynamics (76-LubS-4) **L 491**

Kofskey, M. G. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (D) (AC) **P 59**

Kohav, Y. Velocity Distribution in Semiopen Channels (TB) **F 764**

Kohser, R. A. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (D) **I 1375**

Koiter, W. T. On the Three-Dimensional Theory of Cracked Plates (D) (AC) **AM 374**

Komanduri, R. Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Konicek, L. Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**

Kopper, F. C. Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**

Kops, L. Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) **I 360**

Kordyban, E. Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (D) **F 103**; (AC) **F 104**

Kornhauser, A. L. Scheduling Delays in Synchronous Transportation Networks **DS 173**

Kosobud, R. F. Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) **DS 75**

Kosuge, H. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Koterazawa, R. Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**

Kotzur, J. Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (D) (AC) **F 776**; Effects of System Rotation on the Performance of Two-Dimensional Diffusers (D) (AC) **F 429**

Kowalski, G. J. Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**

Kozik, T. J. Finite Rotations and Associated Displacement Vectors (BN) **AM 698**

Krafft, J. M. Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (D) **MT 35**; (AC) **MT 36**

Kragelsky, I. V. On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**

Krajcinovic, D. Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) **AM 102**

Krane, R. J. Perturbation Solution for Convecting Fin With Variable Thermal Conductivity (D) (AC) **HT 685**

Krankota, J. L. The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**

Kraus, H. Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**

Krause, H. H. Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

Krempl, E. Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**; An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**; An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures; Part II—Application to Type 304 Stainless Steel (D) (AC) **MT 112**

Krishnamoorthy, G. Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**

Krzyżanowski, J. Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading (TB) **F 573**

Ku, P. M. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (D) **L 315**; (AC) **L 317**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (D) **L 242**; (AC) **L 243**; Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part II—Ellipticity Parameter Results (D) (AC) **L 382**; Panel Discussion on Contact Fatigue (D) **L 317**

Kuak, Y. C. Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**

Kueny, J. L. Statistical Weather Forecasting (76-Aut-A) **DS 49**

Kuhn, H. A. Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Kulacki, F. A. An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**

Kulshrestha, P. K. Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**

Kumble, R. G. The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) **I 1237**

Kume, R. Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**; Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Kunz, R. Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**

Kurajian, G. M. Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**; Prediction of Failure of Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**

Kurosaka, M. Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**

Kurosaki, Y. Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) **I 211**

Kurtz, E. F., Jr. Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

Kwiatkowski, A. W. Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**

Kwok, C. K. A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 765**

L

Laboratory Characterizations
Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**

Ladd, H. E. Mechanism Design Using Animation (76-DET-54) **I 1324**

Lagneborg, R. A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**

Lagrangian Analysis Technique
Analysis of Elastic-Plastic Impact Involving Severe Distortions (76-APM-U) **AM 439**

Lahoti, G. D. Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**

Laird, A. D. K. Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Laks, B. Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**

Lakshminarayana, B. Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (76-WA/FE-8) **F 163**; (D) (AC) **F 172**; A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbo-machinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**; Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**

Lalas, D. P. The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**

Laminar Boundary Layers
Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**

Laminar Channel Flow
Symmetrical Laminar Channel Flow With Wall Suction (75-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**

Laminar Diffusion Flames
The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**

Laminar Dispersion
An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**

Laminar Film Condensation
Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**
Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**
Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**

Laminar Flow
An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**
An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**
Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**
Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**
Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**
Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**
Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**
The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**
Super Laminar Flow in Bearings—A Review of the Second Leeds-Lyon Symposium, Lyons, France, September 17-19, 1975 (FR) **L 5**
Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**
Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**

Laminar Forced Convection
A Numerical Study of Unsteady Laminar Forced Convection From a Circular Cylinder (76-HT-FF) **HT 303**

Laminar Free Convection
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Laminar Free Convection Over Two-Dimensional and Axisymmetric Bodies of Arbitrary Contour (Ad) **HT 344**
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
Locally Nonsimilar Solution for Laminar Free Convection Adjacent to a Vertical Wall (TN) **HT 321**

Laminar Incompressible Flow
Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**

Laminar Natural Convection
The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**
Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Laminar Pipe Flow
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**

Laminar Wall Boundary Layers
Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**

Laminated Composites
A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**

Laminated Cylinders
Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) **AM 124**

Laminated Plates
In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**

Landram, C. S. Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**

Landweber, L. Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Langdon, T. G. A Constitutive Equation for High-Temperature Flow (D) (AC) **MT 190**; Deformation Mechanism Maps: Their Use in Predicting Creep Behavior (75-Mat-2) **MT 125**; (D) (AC) **MT 131**

Lankford, J., Jr. Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**; Plastic Strain Distribution at the Tips of Propagating Fatigue Cracks (75-Mat-6) **MT 24**

Landt, R. C. Criteria for Evaluating Bolt Head Design (76-DE-30) **I 1179**

Lap Joints
Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**

Larinoff, M. W. Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**

Laser-Doppler Measurements
Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**; (D) (AC) **F 777**

Laser Interferometry
A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Laser Velocimeter
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**

Lateral Critical Speeds
Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

Lateral Flow
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Lateral Loads
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**

Latinovic, V. On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**

Lauer, J. L. Infrared Emission Spectra of Elastohydrodynamic Contacts (75-LUB-10) **L 230**

Launder, B. E. Application of a General Boundary Layer Analysis to Turbulent Boundary Layers Subjected to Strong Favorable Pressure Gradients (D) **F 129**; (AC) **F 130**; On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**; Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**; The Near-Field Character of a Jet Discharged Normal to a Main Stream (75-WA/HT-108) **HT 373**; The Prediction of Three-Dimensional Discrete-Hole Cooling Processes—Part 1: Laminar Flow (75-WA/HT-109) **HT 379**; A Reynolds Stress Model for Turbulent Corner Flows—Part II: Comparisons Between Theory and Experiment (D) **F 276**; (AC) **F 277**

Law, D. V. Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**

Laws of Motion
Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

Lawson, M. L. Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Layered Media
Transient Temperature Rise in Layered Media (TN) **HT 329**

Layered Solids
On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (75-Lub-16) **L 367**; (D) **L 373**; (AC) **L 374**

Layers
The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**

Le May, I. *(reviewer)* Creep, Viscoelasticity and Creep Fracture in Solids (BR) **MT 191**; Deformation Mechanism Maps: Their Use in Predicting Creep Behavior (D) (AC) **MT 131**; *(reviewer)* Metal Fatigue (BR) **MT 96**; The Relation Between Ultimate Tensile Strength and Carbide Size in Steel (75-Mat-18) **MT 173**

Lead Ferrite
Thermal Contact Conductance of Lead Ferrite and Boron Nitride (TN) **HT 331**

Leading Edge
Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade (TB) **P 554**

Leaf Curvature
A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Leakage
Leakage-Free Journal Bearings (76-Lub-F) **L 441**
On Reciprocating Toroidal Seals (75-WA/DE-20) **I 783**

Leak-Tight Joints
Application of Spiral Wound Gaskets for Leak-Tight Joints (D) **PVT 81**; (AC) **PVT 82**

Least Constraint
The Practical Use of Gauss' Principle of Least Constraint (76-APM-P) **AM 491**

Least Squares Methods
A Linear Squares Method for Describing and Comparing Gently Curved Three-Dimensional Surfaces (75-Prod-F) **I 48**

Lebeck, A. O. Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**

Leckie, F. A. Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**

Lee, C. K. Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**

Lee, D. G. Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory; Part 2: Verification and Applications (D) **I 495**; (AC) **I 496**

Lee, L. Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**

Lee, P. M. A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 766**

Lee, S. L. An Experimental Study of Internal Hygrocysts (D) (AC) **F 693**

Lee, S. Y. Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**
Lee, T.-C. A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) **AM 349**
Lee, T. W. Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 2: Applications (76-DET-25) **I 1281**; Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**
Leibovich, S. Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**
Lennox, W. C. Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**
Lenski, J. W., Jr. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 544**; (AC) **L 546**
Lenz, E. Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) **I 246**
Leung, C. L. Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**
Leung, P. Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (D) **P 347**; (AC) **P 348**
Levy, E. K. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**; Symmetrical Laminar Channel Flow With Wall Suction (75-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**
Lewis, R. W. The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
Li, C.-H. A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**
Li, D. F. Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**
Lian, M. S. A Simple Parameterization for the Water Vapor Emissivity (TN) **HT 676**
Liao, G. S. Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) **P 401**; Steam Flow Through Safety Valve Vent Pipes (D) **F 206**; (AC) **F 207**
Libby, P. A. *(reviewer)* Analysis of Turbulent Boundary Layers (BR) **AM 189**
Librescu, L. *(author)* Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**
Lichtfuss, H. J. Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (D) **P 55**; (AC) **P 257**
Liebowitz, H. Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (D) **PVT 45**; (AC) **PVT 46**
Life Predictions
V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**
Lift Force
Shear Effects in Hot-Wire Measurements (TB) **F 771**
Lift/Drag Ratio
Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**
Ligament Efficiency
Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**
Ligament Tensile Tests
The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) **I 1237**
Limit Loads
Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**
Lin, C. T. Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**
Lin, F. N. Laminar Free Convection Over Two-Dimensional and Axisymmetric Bodies of Arbitrary Contour (Ad) **HT 344**
Lin, H.-C. Strain-Rate Effect in the Endochronic Theory of Viscoplasticity (76-APM-G) **AM 92**
Lin, J. C. The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**
Lin, L. H. *(author)* Optical Holography (BR) **AM 523**
Lin, R.-C. Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**
Lin, Y. K. Statistical Analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**
Lindholm, U. S. An Incremental Criterion for Time-Dependent Failure of Materials (76-Mat-H) **MT 140**
Line Force Concepts
Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**
Linear Accelerometers
Measurement of Angular Acceleration of a Rigid Body Using Linear Accelerometers (D) **AM 377**; (AC) **AM 378**
Linear Control
System Stability by Improved Routh and Jury Arrays **DS 206**
Linear Damage Lines
A Cumulative Damage Rule Based on the Knee Point of the S-N Curve (76-Mat-E) **MT 316**
Linear Distributed Parameters
Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**
Linear Elastic Solutions
Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**
Linear Elasticity
Contact Between Viscoelastic Bodies (76-WA/APM-19) **AM 630**
Linear Methods
A Linear Squares Method for Describing and Comparing Gently Curved Three-Dimensional Surfaces (75-Prod-F) **I 48**
Linear Programming
A Linear Programming Approach for Balancing Flexible Rotors (75-DET-94) **I 1030**
Linear Regression Models
The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**
Linear Resistance Elements
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
Linear Springs
Epicyclic Gear Vibrations (75-DET-14) **I 811**
Linear System Parameters
Frequency-Domain Synthesis of Optimal Inputs for Linear System Parameter Estimation (76-Aut-V) **DS 130**
A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**
Linear Systems
Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**
On the Identification of Noise Covariances in Continuous Linear Systems (76-Aut-LL) **DS 296**
Optimal Command Generation for Tracking a Class of Discontinuous Trajectories (76-Aut-R) **DS 167**
Minimax Output Feedback Regulators (76-Aut-JJ) **DS 270**
Linear Theory
Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**
Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**
Linear Thermoelasticity
On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**
Linear Transport Laws
Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**
Linear Waves
Linear and Nonlinear Waves (BR) **AM 190**
Linearizers
A Simple Linearized Hot-Wire Anemometer **F 749**
Linehan, J. H. Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
Ling, C.-B. Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load (BN) **AM 188**
Ling, F. F. On the Heavily Loaded Elastohydrodynamic Contacts of Layered Solids (D) **L 373**; (AC) **L 374**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (D) **L 242**; (AC) **L 243**
Linkages
Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) **I 788**
Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**
On Bidirectionally Snapping Linkages (TB) **I 1363**
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**
Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**
Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) **I 1183**
Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **P 1255**
Liquid Droplets
The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**
Liquid Films
Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**
On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**
Liquid Layers
Observations of Wave Motion and Upstream Influence in a Stratified Fluid (76-APM-Q) **AM 222**
Liquid Metal Circuits
Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Liquid Metals
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**
Liquid Oscillations
The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**
Liquid Pumping
Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**
Liquid Sloshing Modes
Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**
Liquid-Filled Channels
Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**
Liquids
Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**
Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**
Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**
Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**
Liquid Container Filling and Charging (TB) **I 730**
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**
Small Bubble Motion in an Accelerating Liquid (76-WA/APM-5) **AM 399**
Transient Filtration in a Porous Elastic Cylinder (76-WA/APM-16) **AM 594**
Lisini, G. G. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**
Litchman, H. M. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**
Little, R. M. A Linear Programming Approach for Balancing Flexible Rotors (75-DET-94) **P 1030**
Littmann, W. E. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**
Liu, C. R. The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **P 1200**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**
Liu, H. C. Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**
Liu, J. Y. Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**; Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) **L 564**; (D) **L 572, 573**; (AC) **L 573**
Liu, M. C. M. An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**
Liu, R. S-Z. Time Series Methods for the Synthesis of Random Vibration Systems (76-APM-A) **AM 159**

Liu, Y. K. An Experimental Study of Package Cushioning for the Human Head **AM 469**; Measurement of Angular Acceleration of a Rigid Body Using Linear Accelerometers (D) **AM 377**; (AC) **AM 378**

Living Tissue

An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**

Load Cells Testing

Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**

Load Deflection

A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Load Eccentricity

On Eccentrically Loaded Fasteners (75-WA/DE-9) **I 776**

Loads, Loading

Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) **L 564**; (D) **L 572, 573**; (AC) **L 573**

Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**

Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**

Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) **I 369**

Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) **I 375**

Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**

Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads (Er) **PVT 198**

Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Estimation of Cumulative Fatigue Damage Under Random Loading (75-DE-E) **I 348**

Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**

Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**

Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load (BN) **AM 188**

On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**

Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**

Tangential Loading of Two Bodies in Contact (BN) **AM 513**

The Three-Dimensional Hollow or Solid Truncated Cone Under Axisymmetric Torsionless End Loading (76-APM-1) **AM 59**

Transient Analysis of Offshore Loading Systems (D) **I 383**; (AC) **I 384**

Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) **AM 625**

Localized Heating

The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**

Localized Impulsive Loading

Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**

Locher, W. E. Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Loehrke, R. I. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**; The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**

Logan, E. Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**; Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves (TB) **DS 316**

Lohmann, R. P. Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (D) (AC) **F 585**; The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (AC) **F 363**; The Vorbix Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**

Longcope, D. B. Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Longevity

Statistical analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**

Loop Equations

A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) **I 1301**

Lord, H. W. The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**

Lord, P. R. The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**

Lorenz, J. J. Nucleation Site Activation in Saturated Boiling (D) **MT 340**; (AC) **HT 341**

Loss Coefficients

Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**

Loss Factors

Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**

Loss Sources

Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) **P 411**

Loss-of-Coolant Accident (LOCA)

An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**

Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**

Louis, R. J. Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves (TB) **DS 316**

Love, W. J. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**; Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**

Low-Aspect-Ratio

Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

Lower Bounds

Lower Bound for Fundamental Torsional Frequencies (BN) **AM 510**

Lowery, R. L. Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**

Lozier, J. C. The Oldenburger Award Response—An Appreciation of Harry Nyquist **DS 127**

Lu, P.-C. Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**

Lubricant Film

On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) **L 575**; (D) (AC) **L 579**

Lubricant Flow

Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**

Lubricant Rheological Models

Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**

Lubricant Starvation

Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (75-LubS-3) **L 66**; (D) **L 71, 72**; (AC) **L 72**

Lubricant Temperature

Traction Characteristics of a MIL-L-7808 Oil **L 607**; (D) (AC) **L 612**

Lubricants, Lubrication

Application of Finite Element Methods to Lubrication: An Engineering Approach (Er) **L 39**; Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**

Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**; Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315-317**; (AC) **L 317**

The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

A Critical Survey of High Pressure Lubricant Models (75-Lub-15) **L 258**; (D) **L 265, 266**; (AC) **L 266**

Design Equations for the Short-Time Viscosity Behavior of a Lubricant (TB) **L 476**

Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**

Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) **L 27**

Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**

International Lubrication Conference: Tokyo, Japan—June, 1975 (FR) **L 193**

Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (75-Lub-11) **L 223**; (D) (AC) **L 228**

JSLE-ASLE International Lubrication Conference—Tokyo, 1975 (FR) **L 353**

Leakage-Free Journal Bearings (76-Lub-F) **L 441**

The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**

Lubrication by a Melting Solid (75-Lub-26) **L 22**

An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**

Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (75-Lub-1) **L 463**; (D) (AC) **L 470**

Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**; Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**

A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) **L 426**; (D) **L 431, 432**; (AC) **L 432**

Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342**; (AC) **L 343**

Lubricated Rollers

The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**

Lubrication Oils

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**

Lucia, A. C. On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) **PVT 199**

Luco, J. E. Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) **AM 419**

Ludema, K. C. Abrasive Impact Wear of Type (D) (AC) **L 334**

Ludwig, L. P. *(contributor)* List of Theses Topics in Tribology—II: Seals (76-Lub-G) **L 398**

Lui, M.-W. The Relation Between Ultimate Tensile Strength and Carbide Size in Steel (75-Mat-18) **MT 173**

Lund, J. W. Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**; Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) **L 57**

Lund, K. O. Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**

Lundgren, T. S. *(reviewer)* Statistical Fluid Mechanics, Vol. II (BR) **AM 521**

Lyon, J. R. An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**

Lyons, D. W. Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**; A Program to Control the Hazard of the Dust From Cotton (75-Tex-A) **I 297**

M

Mabie, H. H. Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**

MacDonald, J. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**

MacFarlane, J. A. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**

Machine Elements

Prediction of Failure in Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**

Machine Life Expectation

Machine Life Expectation (75-DE-L) **I 862**

Machine Parameters

The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**

Machine Tool Base

Optimization of a Ribbed Table for Minimum Weight and Minimum Deflection (75-DE-K) **I 30**

Machine Tool Chatter

Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**

Machine Tool Systems

Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**

Machine Tools

Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**

In-Process Analysis of Machine Tool Structure Dynamics and Prediction of Machining Chatter (75-DET-20) **I 301**

Product Design Implications of New High-Speed Milling Techniques (76-DE-22) **I 1170**

A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**

Machinery

Cavitation in Relation to the Design and Operation of Hydrodynamic Machinery (Op) **F 590**

Is There Any Fluids Engineering Challenge Left In Positive Displacement Machinery? (Op) **F 142**

Machining

Determination of Optimum Machining Conditions—Deterministic and Probabilistic Approaches (75-Prod-K) **I 354**

The Formation and Properties of Machining Burrs (75-Prod-J) **I 66**

Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-WA/Prod-25) **I 360**

Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) **I 217**

The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**

Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**

Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**

Machining Chatter

An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**

Machining Economics

Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory (75-Prod-4) **I 481**; (D) **I 495**; (AC) **I 496**; Part 2: Verification and Applications (75-Prod-5) **I 487**; (D) **I 495**; (AC) **I 496**

Macroeconomic Models

A Macroeconomic Model Displaying Growth and Cycles (75-WA/Aut-24) **DS 63**

Macroscopic Stiffness

Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**

Madsen, N. An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (D) (AC) **F 181**

Maewal, A. A Continuum Model for Diffusion in Laminated Composite Media (76-HT-Z) **HT 133**

Magnesium

High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

Magnetic Fields

Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**

Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**

Magnetic Forces

Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Magnetic Particles

Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**

Magneto-Gas Dynamics

Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics (TB) **F 580**

Magnetohydrodynamics

MHD Pipe Flow With Variable Wall Porosity (BN) **AM 172**

Mahdavian, S. M. Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) **L 27**; Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**

Mahig, J. Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**

Main Flow

The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**

Maiya, P. S. Heat-to-Heat Variation in Creep Properties of Types 304 and 316 Stainless Steels (D) **PVT 85** (AC) **PVT 86**

Majumdar, B. C. Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**

Makeup-Water Requirements

Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**

Malanoski, S. B. Experimental Parametric Study of a Squeeze Film Bearing (D) (AC) **L 213**

Malkin, S. Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**; Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**

Malkin, S. Review of Materials Processing Literature 1971–72—Part 2: Grinding **I 11**; Selection of Operating Parameters in Surface Grinding of Steels (75-Prod-G) **I 56**

Maneri, C. C. A Correction to Noncircular Duct Hot Patch Data (TN) **HT 332**

Mangione, B. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**

Manifolds

Flow Distribution Manifolds (76-FE-7) **F 654**; (D) **F 665**; (AC) **F 666**

Manning, J. R. A Linear Least Squares Method for Describing and Comparing Gently Curved Three-Dimensional Surfaces (75-Prod-F) **I 48**

Manson, S. S. Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**

Mansour, W. M. Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**

Manual Preview Tracking

The Human Operator in Manual Preview Tracking (an Experiment and Its Modeling Via Optimal Control) **DS 407**

Manufacturing Tolerances

Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**

Maples, G. Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**

Mapping

Note on the Large Deflections of Irregular Shaped Plates by the Method Conformal Mapping (BN) **AM 356**

Margolis, D. L. Measurement of the Propagation of Long-Wavelength D turbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

Marine Gas Turbines

The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**

Marine Life

Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**

Marine Transportation

What Limits the Speed of Marine Transportation? **F 1**

Markenscoff, X. Distribution of Shearing Stresses in an Orthotropic Cantilever (Er) **AM 524**

Market Price Formation

Simulation of Market Price Formation as a Game Between Stochastic Automata (76-Aut-Z) **DS 91**

Markho, P. H. The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**

Markowski, S. J. The Vortex Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**

Marmur, A. The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**

Marner, W. J. Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate (TB) **F 119**

Marschall, E. Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**

Marsh, K. J. (*author*) Metal Fatigue (BR) **MT 96**

Martin, C. S. Vertically Downward Two-Phase Slug Flow **F 715**

Martin, D. J. The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**

Martin, G. D. Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**

Martin, J. B. Work Bounding Functions for Plastic Materials (76-APM-HH) **AM 434**

Martin, S. E. On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**

Maruyama, T. Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (D) **F 778**; (AC) **F 780**

Masliyah, J. H. Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 25**

Mass

Added Mass and Damping of a Vibratory Rod in Confined Viscous Fluids (D) **AM 699**; (AC) **AM 700**

Mass-Flow Bins

Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**

Mass Parameters

Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**

Mass Particles

Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Mass Transfer

Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**

Heat and Mass Transfer From Freely Falling Drops (75-WA/HT-37) **HT 120**; (D) **HT 339**; (AC) **HT 340**

Mass Transit

Scheduling Delays in Synchronous Transportation Networks **DS 173**

Mass Transport

On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**

Masses

Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**

Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**

Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**

Mastanaiah, K. Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**

Material Flows

An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**

Material Nonlinearity

The Inelastic Large Deformation of Beams (BN) **AM 689**

Material Parameter Variability

Effects of Material Parameter Variability on Buckling and Creep Fatigue Interaction at Elevated Temperature **PVT 75**

Material Removal
Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory (75-Prod-4) **I 481**; (D) **I 495**; (AC) **I 496**; Part 2: Verification and Applications (75-Prod-5) **I 487**; (D) **I 495**; (AC) **I 496**
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**
Material Removal Practice
Review of Materials Processing Literature 1971–72—Part 1: Material Removal Practice **I 1**
Materials
An Incremental Criterion for Time-Dependent Failure of Materials (76-Mat-H) **MT 140**
Materials Processing
Review of Materials Processing Literature 1971–72 **I 1**; Part 1: Material Removal Practice **I 1**; Part 2: Grinding **I 11**; Part 3: Review of German Language Literature **I 19**; Part 4: Review of Japanese Language Literature, 1972 **I 26**
Materials Science & Technology
Treatise on Materials Science and Technology (BR) **AM 384**
Mathematical Formulas
Handbook of Mathematical Formulas (BR) **L 349**
Mathematical Models
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**
Mathematical Programming
Determination of Optimum Machining Conditions—Deterministic and Probabilistic Approaches (75-Prod-K) **I 354**
On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**
Mathieu Equations
A Study of Coupled Mathieu Equations by Use of Infinite Determinants (76-APM-12) **AM 349**
Mathieu, J. Momentum Flux Development From Three-Dimensional Free Jets (D) (AC) **F 260**; Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**
Matsuki, M. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**
Matsuo, K. Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**
Matsuzaki, Y. On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**
Maximum Moment Capability
Maximum Moment Capability of Pipe With Various D/T Ratios (75-Pet-12) **I 1107**
May, W. R. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**
Mayer, J. E., Jr. Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory; Part 2: Verification and Applications (D) **I 495**; (AC) **I 496**
Mayle, R. E. Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**; A Separated and Reattached Flow on a Blunt Flat Plate (D) **F 85**; (AC) **F 86**
Mayne R. W. Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**
Mayo, R. Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) **I 1342**
Mayr, O. *(author)* The Origins of Feedback Control (BR) **DS 204**
McCartney, R. F. *(recipient)* Materials Division Best Paper Award **MT 1**
McCool, J. I. Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (D) **L 71**; (AC) **L 72**
McDonald, J. G. Product Design Implications of New High-Speed Milling Techniques (76-DE-22) **I 1170**
McEvaddy, P. J. Scheduling Delays in Synchronous Transportation Networks **DS 173**
McHugh, J. D. Two-Fluid Flow Between Rotating Annular Disks (D) (AC) **L 222**
McKague, E. L., Jr. Moisture Diffusion in Fiber-Reinforced Plastics (76-Mat-G) **MT 92**
McKenzie, A. B. Performance Development of the Gem Turboshaft Engine (75-GT-28) **P 114**
McLaughlin, P. V. Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**
McLean, A. G. Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**
McVaugh, J. M. The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Mead, D. J. Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**
Mean Beam Lengths
Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**
Mean Diameters
Mean Diameters in Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**
Mean Flow
A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbomachinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**
Mean Flow Velocity Vector
Direct Measurement of the Mean Flow Velocity Vector **F 736**
Mean Stress
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**
Mean Velocity
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (AC) **F 363**
Mean-Square Response
Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**
Measured Temperature Characteristics
Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**
Measurement Errors
Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**
Measurement Systems
Measurement Systems, Application and Design, Revised Edition (BR) **DS 204**
Mechanical Accumulator Design
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**
Mechanical Face Seals
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**
Mechanical Failure
The Failure-Experience Matrix—A Useful Design Tool (75-DET-122) **I 1074**
Mechanical Joints
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**
Mechanical Oil Barriers
Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**
Mechanical Properties
The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**
Mechanical Pulse Filters
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**
Mechanical Seals
Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**
Mechanical Separation
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Mechanical Vibrating Systems
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) **AM 345**
Mechanism Design
Mechanism Design Using Animation (76-DET-54) **I 1324**
Mechanism Synthesis
Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 176**
A Survey of Optimization Methods Applied to the Design of Mechanisms (75-DET-95) **I 1036**
Mechanisms
Heuristic Combinatorial Optimization in the Kinematic Design of Mechanisms—Part 1: Theory (76-DET-24) **I 1277**; Part 2: Applications (76-DET-25) **I 1281**
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**
Mechanistic Ecology
Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**
Mecking, H. A Recovery-Athermal Glide Creep Model (D) **MT 121**; (AC) **MT 122**
Medicine
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**
Medina, F. Price Level Stabilization Experiments Using the Dynamic Phillips Curve Concept (76-Aut-T) **DS 68**
Mehdizadeh, P. Casing Collapse Performance (75-Pet-41) **I 1112**
Mehra, R. K. Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**; Frequency-Domain Synthesis of Optimal Inputs for Linear System Parameter Estimation (76-Aut-V) **DS 130**
Mehta, P. K. *(reviewer)* High-Alumina Cement Concrete (BR) **MT 191**
Melamed, L. A Theory of Concentrators of Solar Energy in a Central Receiver for Electric Power Generation (D) (AC) **P 375**
Melnikov, Yu. A. Surface Integral Method Applied to the Problems of an Elastic Strip With Periodically Spaced Holes (76-APM-NN) **AM 599**
Melt Layers
Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**
Melting
Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**
Melting Solid
Lubrication by a Melting Solid (75-Lub-26) **L 22**
Melting Surfaces
Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**
Meniscus
Evaporation From a Capillary Tube (76-HT-NN) **HT 178**
Mercier, O. L. Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (D) (AC) **F 78**
Mercury
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**
Meshing Gear Train
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**
Metal Cutting
Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**
Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) **I 258**
Metal Cutting Tools
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**
Metal Fatigue
Metal Fatigue (BR) **MT 96**
Metal Flow
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**
Metal Flow in Two-Die Swaging (75-WA/Prod-23) **I 1121**
Metal Forming Processes
Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**
Metal Oxycarbides
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**
Metallic Diaphragms
The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**

Metallic Wire
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**
Metals
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) **MT 244**
Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**
Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**
Energy Approach for Creep-Fatigue Interactions in Metals at High Temperatures (D) **PVT 83**; (AC) **PVT 84**
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**
Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**
Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**
Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/APM-6) **AM 445**
Metering Systems
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**
Methodology
Large-Scale Systems Methodology and Urban Revitalization (F) **DS 357**
Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**
Methylene Chloride
A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**
Metric Methods
A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**
Metz, D. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**
Microbubble Spectra
Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**
Microcirculation
An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**
Micro-Hardness Measurements
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Microlayer Evaporation
A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**
Micropolar Elastics
Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**
Micropolar Fluids
Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**
Squeeze Film Theory for Micropolar Fluids (75-LubS-5) **L 139**; (D) **L 144**
Microscale Behavior
Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**
Microstresses
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Microsphere Insulations
Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**
Miedema, B. Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**
Mikic, B. B. Active Sites in Boiling (76-HT-JJJ) **HT 401**; Nucleation Site Activation in Saturated Boiling (D) **HT 340**; (AC) **HT 341**
Mikolajczak, A. A. *(editor)* Technology Status for Blade Flutter in Axial Turbomachinery (Op) **F 337**
Miles, J. B. Inviscid Approximations for Wall Jet-Receiver Interaction (D) (AC) **F 126**; Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**; Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (D) (AC) **F 18**
Miller, A. An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Miller, G. E. Inception of Cavitation From a Solid Surface (75-WA/DE-13) **I 145**
Miller, J. A. Oscillating Turbulent Flow in a Conical Diffuser (D) **F 700**; (AC) **F 701**; A Simple Linearized Hot-Wire Anemometer **F 749**
Miller, T. V. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**
Milling Machines
Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**
Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**
Milling Techniques
Product Design Implications of New High-Speed Milling Techniques (76-DE-22) **I 1170**
Mills, A. F. Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**
Milner, D. A. Some Aspects of Computer Numerical Control With Reference to Interpolation (75-Prod-L) **I 883**
Min, J. An Experimental and Theoretical Study of Transitional Turbulent Pulsatile Flow in a Channel (76-APM-MM) **AM 559**
Minassian, L. M. A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**
Minimal Time Start-Up
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**
Minimax Performance Index
Minimax Output Feedback Regulators (76-Aut-JJ) **DS 270**
Minimum-Weight Design
Minimum-Weight Design of Vibrating Elastic Structures With Dynamic Deflection Constraint (BN) **AM 178**
Minkowycz, W. J. Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Mirandy, L. An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**; Stresses at the Surface of a Flat Three-Dimensional Ellipsoidal Cavity (75-Mat-12) **MT 164**
Misra, A. K. Dynamics of a Drifting Buoy-Cable-Array Assembly Used in Submarine Detection (75-DET-27) **I 935**
Missile Firing Tests
Missile Firing Tests at Stationary Targets in Support of Blade Containment (75-GT-47) **P 159**
Mist Formation
Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**
Mistuned Bladed Disks
Vibration Modes of Mistuned Bladed Disks (75-GT-114) **P 349**
Mitchell, B. J. Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**
Mitchell, J. W. Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**
Mitchell, L. D. A Note on Blade Loss Dynamics of Rotor-Bearing Systems (D) (AC) **I 504**
Mitre Joints
WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**
Mixed Flow
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**
Mixing
Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**
Turbulent Mixing and Reacting Flow Characterization (Er) **F 198**
Mixing Flow
Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**
Miyao, K. Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Miyata, M. Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**
Miyazaki, H. Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**
Miyoshi, E. Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**
Mizushina, T. Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (D) **F 778**; (AC) **F 780**
Mlakar, P. F. Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**
Mobarak, A. A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbo-machinery Passage (D) **P 144**; (AC) **P 146**
Modal Coefficients
Modal Coefficients for the Axisymmetric Response of Thin Circular Plates (BN) **AM 511**
Modal Information
Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**
Modal Simulation
A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) **I 876**
Modal Truncation
Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**
Mode Shapes
Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**
Model Validation
Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**
Modeling
Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**
Modern Control
On the Application of Modern Control to Power Plants (F) **DS 320**
Modi, V. J. Dynamics of a Drifting Buoy-Cable-Array Assembly Used in Submarine Detection (75-DET-27) **I 935**
Moeller, T. L. The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) **AM 485**
Moes,H. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**
Mohamed, F. A. Deformation Mechanism Maps: Their Use in Predicting Creep Behavior (75-Mat-2) **MT 125**; (D) (AC) **MT 131**
Mohamed, M. H. Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**
Mohammadian, S. Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**
Mohan, S. Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 2: Balancing (D) **P 187**; (AC) **P 188**
MOIRE Technique
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Moisture Diffusion
Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**
Molecular Gas Radiation
Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**
Molecular Gases
Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**
Radiation Heat Transfer Through Multiband Molecular Gases **HT 638**
Molnar, A. J. Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**
Moment Loading
Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**
Moments
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-O) **DS 186**
Momentum Balancing
Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**

Momentum Exchange Models
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**
Momentum Integral Solutions
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**
Momentum Transport
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**
Momentum-Flux Development
Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**
Monin, A. S. *(author)* Statistical Fluid Mechanics, Vol. II (BR) **AM 521**
Monotonic Deformation
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Montrone, E. D. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**
Moon, L. F. Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**
Moore, C. V. An Introduction to Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code **PVT 231**
Moore, D. F. *(author)* Principles and Applications of Tribology (BR) **L 635**
Moore, E. F. Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**; A Transient Response Approximation for Noncircular Fluid Transmission Lines **F 244**
Moore, F. K. Analysis of Large Dry Cooling Towers With Power-Law Heat Exchanger Performance (75-WA/HT-46) **HT 345**
Moore, G. F. Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**
Moore, J. M. System Stability by Improved Routh and Jury Arrays **DS 206**
Mooring Lines
On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**
Mooring Systems
Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**
Moorings
A Simple Model of Submarine Hoses in Single Point Moorings (BN) **AM 170**
Morecki, A. Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**
Morel, T. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (D) **F 351**; (AC) **F 352**
Moretti, G. Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (D) **P 363**; (AC) **P 364**
Moretti, P. M. Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**
Morgenthaler, J. H. Turbulent Mixing and Reacting Flow Characterization (Er) **F 198**
Mori, M. Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**
Mori, N. On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**
Morin, T. J. Accelerated Diffusion Bonding Using Induced Forces (75-GT-36) **P 65**
Moriwaki, T. In-Process Analysis of Machine Tool Structure Dynamics and Prediction of Machining Chatter (75-DET-20) **I 301**
Morkovin, M. V. Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (D) **F 281**; (AC) **F 282**
Morris, G. R. Industrial Power Rates in the Mid-Eighties (76-IPC-Pwr-2) **P 547**
Morris, J. W., Jr. Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**
Morrison, F. A., Jr. Axisymmetric Potential Flow Over Two Spheres in Contact (D) **AM 373**; (AC) **AM 374**; Irrotational Flow About Two Touching Spheres (BN) **AM 365**; Low Knudsen-Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**; Similarity in Transient High Speed Gas Flow Through Porous Media (TB) **F 567**; Small Bubble Motion in an Accelerating Liquid (76-WA/APM-5) **AM 399**
Morrison, H. L. Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) **AM 49**
Mortimer, R. W. In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**
Mosberg, W. Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**
Mote, C. D., Jr. On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**; A Preliminary Analysis of Ski Release Binding Dynamic Properties (76-Aut-BB) **DS 301**
Motherway, J. E. Design Analysis of a Snap-Action Mechanism (76-DE-35) **I 1188**
Motion Pictures
ASME Catalog of Motion Pictures of Research Data in Fluid Mechanics and Heat Transfer **F 151**
Motion Stability
Stability of Motion: A Collection of Early Scientific Papers by Routh, Clifford, Sturm and Böcker (BR) **DS 205**
Motion Trajectories
Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Motosh, -I. N. Determination of Joint Stiffness in Bolted Connections (75-DE-J) **I 858**
Motosh, N. Development of Design Charts for Bolts Preloaded up to the Plastic Range (75-DE-B) **I 849**
Motycka, D. L. Ground Vortex—Limit to Engine/Reverser Operation (75-GT-3) **P 258**; (D) **P 263**; (AC) **P 264**
Mounting
Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**
Moustafa, M. A. Dynamic Properties of a Moving Thread Line (75-DE-N) **I 868**
Moving Loads
Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**
Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**
Moving Surfaces
Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**
Moving Thread Line
Dynamic Properties of a Moving Thread Line (75-DE-N) **I 868**
Mraz, G. J. Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) **PVT 266**
Mucoglu, A. Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux (TN) **HT 523**
Mujumdar, A. S. Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**; Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**; Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**
Mukherjee, D. K. Film Cooling With Injection Through Slots (TB) **P 556**; Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade (TB) **P 554**
Mulcahy, T. M. Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) **MT 264**
Mulhall, B. E. Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**
Mulholland, R. J. Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**
Multi-Edge Tools
On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**
Multielement Cascades
A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**
Multilayer Beams
Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**
Multileaf Journal Bearings
A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**
Multilinear Systems
A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) **I 1301**
Municipals Wates
Short-Term Regulation of BOD Upsets in an Estuary (76-Aut-S) **DS 30**
Munro, H. G. An Examination of a Proposed Method for Evaluating Nonlinear Effects in Fracture Assessment (75-PVP-33) **PVT 40**
Munson, B. R. Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**
Munson, H. E. Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (D) (AC) **L 475**
Mura, T. Fracture Analysis of Adhesively Bonded Sheets (76-WA/APM-12) **AM 652**; *(reviewer)* Treatise on Materials Science and Technology (BR) **AM 384**
Murata, R. The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**
Murch, L. E. A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) **L 426**; (D) **L 431, 432**; (AC) **L 432**
Murphy, W. R. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (D) **L 316**; (AC) **L 317**; *(contributor)* List of Theses Topics in Tribology—II: Boundary Lubrication (76-Lub-G) **L 396**
Murti, P. R. K. Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**
Murty, R. L. Application of MOIRE Technique to the Determination of stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Muska, J. F. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) **P 457**; (D) (AC) **P 464**
Muzzio, A. Approximate Solution for Convective Fins With Variable Thermal Conductivity (TN) **HT 680**
Muzzle Velocity
Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity (TB) **I 381**
Myrick, S. T., Jr. Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**
Myring, D. F. Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (D) **F 546**; (AC) **F 548**

N

Na, T. Y. Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**; Prediction of Failure in Ductile Machine Elements Operating at Elevated Temperatures (75-DET-119) **I 1062**
Nagamatsu, H. T. *(editor)* "Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**
Nagaraj, H. S. Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (D) **L 507**; (AC) **L 508**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**
Nagato, K. Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**
Naghdi, A. K. Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) **I 375**
Nagib, H. M. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**
Nair, S. On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**

Nairn, D. C. An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**

Nakaoka, M. An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**

Nakayama, A. Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**;(D) **F 546**; (AC) **F 548**

Nakra, B. C. Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Namatame, K. Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**

Nandakumar, K. Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 257**

Narain, J. P. Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**

Narang, B. S. Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**

Narasimha, R. Application of a General Boundary Layer Analysis to Turbulent Boundary Layers Subjected to Strong Favorable Pressure Gradients (D) **F 129**; (AC) **F 130**

Narkiewicz, W. Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**

Narkis, Y. On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**

Narrow Gaps

Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**

Narrow-Band Noise

Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**

Nash, C. D., Jr. Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**

Nath, G. An Approximate Method for the Solution of a Class of Nonsimilar Laminar Boundary Layer Equations (75-FE-28) **F 292**

National Economic System

Modeling and Optimization of Economic System in Socialist Countries (76-Aut-GG) **DS 252**

Natural Convection

The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**

Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**

Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**

Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**

Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**

Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**

Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Natural Convection From a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) **HT 446**

Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**

Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Natural Frequencies

Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Nau, B. S. An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**

Navier-Stokes Equations

Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Nayfeh, A. H. Nonlinear Propagation of Wave-Packets on Fluid Interfaces (76-WA/APM-11) **AM 584**

Ndubizu, C. C. Analysis of Large Dry Cooling Towers With Power-Law Heat Exchanger Performance (75-WA/HT-46) **HT 345**

Neale, K. W. *(reviewer)* Nonlinear Theory of Elastic Stability (BR) **AM 521**

Nealy, D. A. The Additive Nature of Film Cooling From Rows of Holes (D) (AC) **P 464**

Near-Exit Regions

Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**

Needle Punched Filters

Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**

Nelson, D. A. Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**; Radiation Heat Transfer Through Multiband Molecular Gases **HT 638**

Nelson, H. D. The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**

Nerem, R. M. An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**

Neutron Irradiation

Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Neville, A. *(author)* High-Alumina Cement Concrete (BR) **MT 191**

Ng, F. W. Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) **I 701**

Ni, R. H. Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**

Nicholas, J. C. Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**

Niedzwecki, J. M. On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**

Nigro, N. J. Equivalent One-Dimensional System for Analysis of Taper Leaf Springs (75-DE-O) **I 39**

Nikiforuk, P. N. On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**

Nikkhah-Bahrami, M. Formulation of the Eigenvalue Problem for an Unconstrained Circular Bar (BN) **AM 166**

Nilson, R. H. Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) **AM 54**

Nimmo, B. G. Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**

Nishida, K. Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**

Nishimura, H. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Niskode, P. M. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (D) **P 499**; (AC) **P 500**

Nitric Oxide

Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Nitrogen Jets

Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**

Nitrogen Oxide Emissions

A Diffusion Limited Model That Accurately Predicts the No_x Emissions From Gas Turbine Combustors Including the Use of Nitrogen Containing Fuels (75-Pwr-11) **P 320**

Noble Metals

Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**

Noda, N. Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**

Noise Covariances

On the Identification of Noise Covariances in Continuous Linear Systems (76-Aut-LL) **DS 296**

Noise Emissions

Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**

Noise Exposure

Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) **P 487**

Noise Generation

Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**

Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**

Noise Sources

Spinning Frame Noise Sources (75-Tex-7) **I 840**

Noise-Induced Stress

Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**

Nolle, H. Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**

Nonaxisymmetric Flow

Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**

Noncircular Ducts

A Correction to Noncircular Duct Hot Patch Data (TN) **HT 332**

Noncircular Fluid Lines

Dynamic Response Approximation for Noncircular Fluid Lines (76-WA/Flcs-2) **DS 421**

A Transient Response Approximation for Noncircular Fluid Transmission Lines **F 244**

Nonclassically Damped Systems

Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

Nondestructive Testing

Holographic Nondestructive Testing (BR) **AM 523**

Nondifferentiable State Constraints

Optimal Control in the Presence of Nondifferentiable State Constraints **DS 432**

Nonelastic Deformation

Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**

Nonferrous Materials

Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**

Nonholonomic Systems

Bond Graphs for Nonholonomic Dynamic Systems (76-WA/Aut-3) **DS 361**

Nonionizing Electromagnetic Irradiation

The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Nonisothermal Walls

Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**

Nonlinear Constraints

A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**

Nonlinear Dynamic Buckling

Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**

Nonlinear Dynamic Models

A Nonlinear Dynamic Model of a Once-Through Subcritical Steam Generator (76-Aut-M) **DS 332**

Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

Nonlinear Effects

An Examination of a Proposed Method for Evaluating Nonlinear Effects in Fracture Assessment (75-PVP-33) **PVT 40**

Nonlinear Oscillators

Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**

Nonlinear Propagation

Nonlinear Propagation of Wave-Packets on Fluid Interfaces (76-WA/APM-11) **AM 584**

Nonlinear Stresses

Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**

Nonlinear Vibrations

A General Method for Simulating the Flow Dependent Nonlinear Vibration of Compressor Reed Valves (75-DET-26) **I 930**

Nonlinear Vibrations of Thin Cylinders (BN) **AM 370**

Nonlinear Wave Equations

An Approximate Periodic Solution of a Weakly Nonlinear Wave Equation (BN) **AM 504**

Nonlinear Waves

Linear and Nonlinear Waves (BR) **AM 190**

Nonlinearities

Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**

Nonlint Particles

Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**

Non-Newtonian Fluids

Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **HT 144**

Non-Newtonian Squeeze Films

Fluid Inertia Effects in Non-Newtonian Squeeze Films (76-Lub-J) **L 409**

Nonphysical Models

The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Nonsimilarity Solutions

Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics (TB) **F 580**

Nonstationary Aerodynamics

Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**

Nonzero Mean Stress

Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**

Nordgren, R. P. *(reviewer)* Small Elastic Deformations of Thin Shells (BR) **AM 702**

Normal Mode Theory

Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**

North, P. The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**

North, W. P. T. A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**

Northup, T. E. Code for Concrete Reactor Vessels and Containments **PVT 326**

Nouse, H. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Novak, J. M. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (D) **P 446**; (AC) **P 447**

Novak, R. A. Two-Dimensional Method for Calculating Separated Flow In a Centrifuged Impeller (D) **F 333**; (AC) **F 335**

Nozzle Area

Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Nozzle-Flapper Valves

Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**

Nozzles

Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**

Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**

Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe (TB) **F 562**

Nuclear Components

Buckling Rules for Nuclear Components—Code Case 1592 **PVT 229**

New Rules for Construction of Section III, Class 1 Components for Elevated Temperature Service **PVT 214**

Nuclear Piping

Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**

Nuclear Power Generation

An Evaluation of the Material Capabilities of Low Carbon 2¼ Cr-1 Mo Steel Forgings (76-Pet-40) **PVT 316**

Nuclear Power Plants

Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) **P 401**

Nuclear Reactors

Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**

Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**

Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**

Velocity Distribution in Semiopen Channels (TB) **F 764**

Nucleate Pool Boiling

A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Nucleation

Active Sites in Boiling (76-HT-JJJ) **HT 401**

Crack Initiation In Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**

Nucleation Experiments

Nucleation Site Activation in Saturated Boiling (D) **HT 340**; (AC) **HT 341**

Numerical Analysis

A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated from Below (Er) **HT 519**

Numerical Control

Some Aspects of Computer Numerical Control With Reference to Interpolation (75-Prod-L) **I 883**

Numerical Optimization

Optimum Reliability at Minimum Cost (75-DET-120) **I 1066**

Numerical Regulation Algorithms

Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

Numerical Turbomachinery Analysis

REVIEW—Progress in Numerical Turbomachinery Analysis **F 592**

Nunn, R. H. Liquid Container Filling and Charging (TB) **I 730**

Nunziato, J. W. Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**

Nurick, W. H. Orifice Cavitation and Its Effect on Spray Mixing **F 681**

Nypan, L. J. Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Nyquist, H. The Regeneration Theory **DS 128**

O

Oakes, R. E., Jr. High Strain Rate Tensile Properties of Annealed 2 ¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**

Oates, G. C. The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**; A Variational Formulation of the Compressible Throughflow Problem (75-GT-32) **P 1**

Obata, F. Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**

Obeid, M. A. Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**

Oberkampf, W. L. Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

Oblate Spheroids

Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**

Ocean Engineering

On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**

Ocean Moorings

Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**

Oceanographic Measurements

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Oda, T. Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**

Odqvist, F. K. G. On the Creep Rupture of a Tube and a Sphere (D) (AC) **AM 376**

Offshore Drilling

On the Design of Mooring Lines for Deep Water Applications (75-WA/OcE-1) **I 514**

Offshore Loading

Transient Analysis of Offshore Loading Systems (D) **I 383**; (AC) **I 384**

Offshore Platforms

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Oh, K. P. Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (D) (AC) **L 228**; A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**; A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Oh, S. I. Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

O'Hara, D. The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**

Ohashi, H. Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**

Ohashi, Y. On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**

Ohe, S. The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Oil

Traction Characteristics of a MIL-L-7808 Oil **L 607**; (D) (AC) **L 612**

Oil Drilling

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Oil Emulsions

The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Oil Film Dampers

Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) **P 393**; (D) **P 399**; (AC) **P 400**

Oil Film Pressure

Dynamic Film Pressure Measurements in Journal Bearing for Use in Rotor Balancing (75-DET-65) **I 92**

Oil Film Thickness

Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**

Oil Jet Velocity

Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**

Oil Jets

Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**

Oil Refineries

Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**

Oil Slicks

Oil Slick Instability and the Entrainment Failure of Oil Containment Booms (75-FE-8) **F 98**; (D) **F 103, 104**; (AC) **F 104**

Oil Supply Pressure

Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**

Oil Well Casings

Casing Collapse Performance (75-Pet-41) **I 1112**

Oilwells

Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**

Oil Whip

Analysis of Flexible Rotor Whirl and Whip Using a Realistic Mydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**

Oily Bilge Water

Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Okabayashi, H. Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**; Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

O'Keefe, J. V. *(assoc. editor)* "Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Oldenburger Medal (1975)

The Presentation of the Oldenburger Medal to Dr. Harry Nyquist **DS 127**; and to Dr. Hendrik W. Bode **DS 125**

Oliver, L. R. V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**

Once-Through Cooling
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**
One-Dimensional Systems
Equivalent One-Dimensional System for Analysis of Taper Leaf Springs (75-DE-O) **I 39**
O'Neill, W. D. Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) **DS 75**
Onsager Reciprocal Relations
Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**
Oosthuizen, P. H. Experimental Study of Free Convective Heat Transfer From Inclined Cylinders (TN) **HT 672**; Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**
Opacifiers
Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**
Open-End Spinning
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**
Open-End Spun Yarns
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**
Operating Limitations
Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**
Operating Parameters
Selection of Operating Parameters in Surface Grinding of Steels (75-Prod-G) **I 56**
Oppelt, W. A Historical Review of Autopilot Development, Research, and Theory in Germany (AH) **DS 215**
Optical Holography
Optical Holography (BR) **AM 523**
Optical Interference Methods
An Optical Interference Method of Studying the Lubrication of a Compliant Bearing (76-LubS-3) **L 486**
Optical Microscopy
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Optimal Control
Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**
The Human Operator in Manual Preview Tracking (an Experiment and Its Modeling Via Optimal Control) **DS 407**
Maximizing Distance of the Golf Drive: An Optimal Control Study (D) (AC) **DS 211**
Optimal Control in the Presence of Nondifferentiable State Constraints **DS 432**
Optimal Control Problems
Further Aspects of Turnpike Theory in Continuous Time With Applications (76-Aut-X) **DS 85**
Optimal Control Theory
Optimal Control of a National Economic System With Full Employment (76-Aut-Y) **DS 80**
Optimal Design
Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**
optimal Design of a Class of Welded Structures Using Geometric Programming (75-DET-86) **I 1021**
Optimal Input Synthesis
Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
Optimal Inputs
Frequency-Domain Synthesis of Optimal Inputs for Linear System Parameter Estimation (76-Aut-V) **DS 130**
Optimal Trajectories
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) **DS 75**
Optimal Values
On Optimal Bolt Preload (75-WA/DE-14) **I 779**
Optimization
A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**
Optimization of Radiating Fin Arrays With Respect to Weight **HT 643**
Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**
Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**
Optimization Methods
A Survey of Optimization Methods Applied to the Design of Mechanisms (75-DET-95) **I 1036**
Optimization Techniques
On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**
Optimum Bolt Design
Criteria for Evaluating Bolt Head Design (76-DE-30) **I 1179**
Optimum Control
On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**
Optimum Design
Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**
Optimum Machining Techniques
Determination of Optimum Machining Conditions—Deterministic and Probabilistic Approaches (75-Prod-K) **I 354**
Optimum Reliability
Optimum Reliability at Minimum Cost (75-DET-120) **I 1066**
Orientation Devices
Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**
Orifice Cavitation
Orifice Cavitation and Its Effect on Spray Mixing **F 681**
Orne, D. Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**
O'Rourke, M. Lower Bound for Fundamental Torsional Frequencies (BN) **AM 510**
Orthogonal Curvilinear Coordinates
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (TN) **HT 525**
Orthotropic Cantilevers
Distribution of Shearing Stresses in an Orthotropic Cantilever (Er) **AM 524**
Orthotropic Photoelasticity
Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**
Orthotropic Plates
Thermal Buckling of Orthotropic Plates (BN) **AM 361**
Orthotropic Symmetry
Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**
Orthotropy
Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**
Oscillating Airfoils
Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**
Oscillating Stress
A Parametric Approach to Cyclic Creep (76-APM-E) **AM 28**
Oscillations
The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**
Oscillators
Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**
Narrow-Band Excitation of a Nonlinear Oscillator (76-APM-38) **AM 340**
Oscillatory Turbulent Flow
An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**
Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**
Osman, M. O. M. On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**
Oster, G. F. Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**
Ostrach, S. Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**
Ostrom, P. A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**
Ōta, H. Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**
Ota, T. A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Otis, D. R. Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**
Ott, W. R. Thermal Contact Conductance of Lead Ferrite and Boron Nitride (TN) **HT 331**
Ou, J.-W. Fully Developed Laminar Flow in Curved Rectangular Channels (75-FE-4) **F 41**
Outdoor Environment
Heat Transfer From Spheres in the Naturally Turbulent Outdoor Environment (75-WA/HT-57) **HT 649**
Outflow
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Out-of-Plane Loading
Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) **I 369**
Ovens, W. G. Metal Flow in Two-Die Swaging (75-WA/Prod-23) **I 1121**
Overlapping Stress Fields
Stress Concentration Factors From Overlapping Stress Fields in Uniaxial Tension (74-WA/DE-3) **I 332**
Overloads
Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**
Owczarek, J. A. Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**
Owen, R. The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**
Oxford, C. J., Jr. Effects of Built-Up Edge in Drilling (D) (AC) **I 735**
Oxycarbides
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**
Özgü, M. R. Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) **HT 159**
Ozoe, H. Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**
Ozkul, A. G. The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

P

Package Cushioning
An Experimental Study of Package Cushioning for the Human Head **AM 469**; (Er) **AM 702**
Packed Beds
Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**
Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**
Padgett, W. J. A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**
Padovan, J. Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) **AM 124**
Paidoussis, M. P. Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
Pailly, C. Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
Pair Contact
Curvature Analysis of Surfaces in Higher Pair Contact—Part 1: An Analytical Investigation (75-DE-Q) **I 397**
Palazotto, A. N. Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**; A Singularity Approach to Circular Plates (76-DE-28) **I 1176**
Pamidi, P. R. On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) **I 1260**
Pampreen, R. C. Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**
Pan, Y.-C. Point Force Solution for an Infinite Transversely Isotropic Solid (76-WA/APM-18) **AM 608**
Pandit, S. M. Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**; A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**
Pandorf, E. C. The ANSI B31 Code for Pressure Piping—Its Past, Present, and Future **PVT 92**
Panoramic Windows
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin

(75-WA/OcE-2) **I 523**

Pao, H.-P. Observations of Wave Motion and Upstream Influence in a Stratified Fluid (76-APM-Q) **AM 222**

Papailiou, K. A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (D) **P 238**; (AC) **P 239**

Papermaking Process
Identification of Papermaking Process From Closed Loop Data by Bivariate Time Series Analysis (76-Aut-MM) **DS 291**
Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**

Parallel Channels
Asymptotic Analysis of the Average, Steady, Isothermal Flow in Coupled, Parallel Channels (74-WA/HT-4) **HT 19**

Parallel Flow
Mean Diameters in Parallel-Flow and Counter-Flow Aerosol Systems (75-HT-36) **HT 297**

Parallel Plate Channel
Flow Development in a Parallel Plate Channel (75-LubS-4) **L 145**; (D) **L 154, 155**; (AC) **L 156**
Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**

Parallel Plate Ducts
The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**

Parallel Plates
Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**
The Squeezing of a Fluid Between Two Plates (76-WA/APM-14) **AM 579**

Parallel Sliding
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**

Parameter Optimization
Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**

Parameterization
A Simple Parameterization for the Water Vapor Emissivity (TN) **HT 676**

Parametric Excitation
Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**

Parametric Resonances
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**

Parikh, N. M. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (75-Lub-43) **L 286**; (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (75-Lub-44) **L 299**; (D) **L 306**; (AC) **L 307**

Park, K. C. A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**

Parker, R. J. Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (D) **L 572**; (AC) **L 573**; Bending Stresses in Spherically Hollow Ball Bearings and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Parks, D. M. Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**; Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (D) **PVT 323**; (AC) **PVT 324**

Parsons, B. A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342** (AC) **L 343**

Particle-Fluid Mixture
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**

Paslay, P. R. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**; Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Vibrations (76-WA/APM-6) **AM 445**

Passive Refrigeration
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**

Patankar, S. V. Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**; Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**

Patchlike Contact
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

Patel, B. M. Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**

Patel, V. C. Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Path Constraints
Mechanism Design Using Animation (76-DET-54) **I 1324**

Patterson, C. V. S. The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**

Patula, E. J. Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**

Paul, B. An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**; Stresses at the Surface of a Flat Three-Dimensional Ellipsoidal Cavity (75-Mat-12) **MT 164**

Paul, G. R. A Critical Survey of High Pressure Lubricant Models (75-Lub-15) **L 258**; (D) **L 265, 266**; (AC) **L 266**

Paynter, G. C. A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer (D) **F 726**; (AC) **F 727**

Paynter, H. M. Guest Editorial **DS 1**; On Harry Nyquist (C) **DS 129**; On Hendrik W. Bode (C) **DS 126**; The Properties of Bond Graph Junction Structures (D) **DS 209**; (AC) **DS 210**; Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

Peavy, B. A. Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**

Pech, K. H. Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**

Peerless, S. J. Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**

Peinecke, D. R. Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**

Penetration Patterns
Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**

Penetration Theory
Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**

Perelson, A. S. The Properties of Bond Graph Junction Structures (D) **DS 209**; (AC) **DS 210**

Perforated Plates
Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**

Performance Characteristics
Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**
Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Performance Criteria
Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**

Performance Test Codes
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**

Periodic Axial Load
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**

Periodic Flow
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**

Periodic Loadings
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**

Periodic Solutions
An Approximate Periodic Solution of a Weakly Nonlinear Wave Equation (BN) **AM 504**

Periodically Spaced Holes
Surface Integral Method Applied to the Problems of an Elastic Strip With Periodically Spaced Holes (76-APM-NN) **AM 599**

Permafrost
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**
Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) **I 701**

Permafrost Regions
"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**

Permeability
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**
Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**

Perturbation Methods
Perturbation Method in Fluid Mechanics (BR) **AM 189**

Perturbation Solutions
Perturbation Solution for Convecting Fin With Variable Thermal Conductivity (D) (AC) **HT 685**
Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**

Perturbation Techniques
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**

Perturbational Stability
Optimality and Perturbational Stability of Economic Growth Trajectories (75-WA/Aut-25) **DS 75**

Peterkin, M. E. Infrared Emission Spectra of Elastohydrodynamic Contacts (75-LUB-10) **L 230**

Peterson, F. B. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (D) **F 94**; (AC) **F 96**

Peterson, M. B. *(contributor)* List of Theses Topics in Tribology—II: Wear (76-Lub-G) **L 397**

Phadke, M. S. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**; Identification of Papermaking Process From Closed Loop Data by Bivariate Time Series Analysis (76-Aut-MM) **DS 291**

Pharmacokinetic Systems
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**

Phase Changes
Effect of Density Change on Multidimensional Conduction Phase Change **HT 550**

Phase Velocities
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

Phased Cooling
Application of Phased Cooling to a Once-Through Cooling System (75-WA/Pwr-3) **P 365**

Phenomenological Analysis
Phenomenological Analysis of Plastic Spherical Indentation (76-Mat-V) **MT 272**

Phillips, A. A Practical Two-Surface Plasticity Theory (D) **AM 378**; (AC) **AM 379**

Phillips, D. T. Optimal Design of a Class of Welded Structures Using Geometric Programming (75-DET-86) **I 1021**

Phillips, J. W. Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (D) (AC) **F 460**

Phillips, D. W. Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**

Photoelasticity
Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**

Photoplasticity
Photoplasticity (BR) **AM 383**

Physical Modeling
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Physics
Review of Continuum Physics (BR) **AM 384**

Physiology
Measurements of Velocity Wave Forms in the Dog Aorta

(76-FE-H) **F 297**
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**
Piasco, J. M. Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**
Pick Ball
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Pierce, F. J. Influence of the Axisymmetric Contraction Ratio on Freestream Turbulence (D) **F 776**; (AC) **F 777**; Measured *uw* Stress Gradients in a Three-Dimensional Turbulent Boundary Layer (TB) **F 768**
Pih, H. Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**
Pile Supports
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**
Pilkey, W. D. Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**; A Linear Programming Approach for Balancing Flexible Rotors (75-DET-94) **I 1030**
Pillsbury, P. W. Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**
Pin-Disk Systems
Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**
Pinions
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**
Pinkus, O. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (75-WA/FE-4) **F 156**; (D) **F 161, 162**; (AC) **F 162**; The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**; Leakage-Free Journal Bearings (76-Lub-F) **L 441**; On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**
Pinotti, P. C. Experiments on Adaptive Control of a Milling Machine (75-WA/Prod-18) **I 239**
Pipe Flow
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**
MHD Pipe Flow With Variable Wall Porosity (BN) **AM 172**
Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**
Pipe Heating
Pipe Heating With Steam Tracers (76-HT-ZZ) **HT 509**
Pipeline System
Physical Interpretations of the Instabilities Encountered in the Deflection Equations of the Unconstrained Pipeline (75-Pet-1) **I 1099**
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**
Pipeline Valves
Maximum Moment Capability of Pipe With Various D/T Ratios (75-Pet-12) **I 1107**
Pipelines
"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (D) **PVT 323**; (AC) **PVT 324**
Pipes
Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature" (TB) **F 323**
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**
Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**
Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**
Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe (TB) **F 562**
Piping
Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**
Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**
Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**
WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**
Piping Systems
Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**
Spectral Analysis of Complex Systems Supported at Several Elevations **PVT 162**
Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**
Pistons
An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**
Pitching Motion
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**
Pivoted Pad Bearings
Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**
Pivoted Pads
Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**
Planar Flow Models
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) **L 344**; (D) (AC) **L 347**
Planar Glide
Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**
Planar Linkages
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**
Planar Mechanisms
Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) **I 1342**
Planar Media
Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**
Planar Nozzles
Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**
Planar Structures
Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**
Planchard, J. Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
Plane Bending
Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**
Plane Boundaries
Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**
Plane Couette Flow
A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**
Plane Deformation
Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) **AM 49**
Plane Elasticity
On Some Unbonded Contact Problems in Plane Elasticity Theory (76-APM-W) **AM 263**
Plane Jets
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) **F 443**
Plane Poiseuille Flow
Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**
Plane Solutions
The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**
Plane Strain
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**
Plane Stress
Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**
Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**
Plane-Strain Extrusion
A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) **AM 97**
Plane-Strain Models
Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**
Planet Bearings
Analysis of a Planet Bearing in a Gear Transmission System (75-Lub-23) **L 40**
Planet Pin Stiffness
Epicyclic Gear Vibrations (75-DET-14) **I 811**
Plane-Wall Diffusers
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
Plastic Behavior
A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**
Plastic Deformation
Computer Simulation of Plastic Deformation Through Planar Glide in an Idealized Crystal (75-Mat-4) **MT 86**
Development of Constitutive Relation for Plastic Deformation From a Dislocation Model (75-Mat-8) **MT 52**
On Proportional Combined Loading Tests of an Aluminum Alloy and Its Analytical Formulation (76-Mat-K) **MT 282**
Plastic Failure
Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**
Plastic Flow
On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**
Plastic-Insulated Wires
Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating (TN) **HT 678**
Plastic Internal Variables
Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**
Plastic Materials
Work Bounding Functions for Plastic Materials (76-APM-HH) **AM 434**
Plastic Properties
Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**
Plastic Spherical Indentation
Phenomenological Analysis of Plastic Spherical Indentation (76-Mat-V) **MT 272**
Plastic Strain Distribution
Plastic Strain Distribution at the Tips of Propagating Fatigue Cracks (75-Mat-6) **MT 24**
Plastic Yield Strength
Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**
Plasticity
Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**
An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**
Fatigue Crack Tip Plasticity Associated With Overloads and Subsequent Cycling (75-Mat-5) **MT 17**
Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**
A Practical Two-Surface Plasticity Theory (D) **AM 378**; (AC) **AM 379**
Plastics
Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**
Plastohydrodynamics
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**
Plate Fins
Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**
Plates
Aeroelasticity of Plates and Shells (BR) **AM 382**

Asymmetric Moment Loading of Annular Elastic Plates (DDM) **AM 353**

Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) **I 166**

Buckling of an Elliptical Plate With Simply Supported Edge Under Uniform Compression (76-APM-AA) **AM 455**

Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**

A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**

Dynamic Fracture of a Beam or Plate in Plane Bending (76-APM-15) **AM 112**

Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) **AM 102**

Dynamics of Initially Stressed Plates (76-APM-29) **AM 304**

An Experimental Verification of Boundary-Layer Solutions of Karman's Equations of Plates (ON) **AM 168**

Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**

Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**

Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**

Further Observations on A533-B Steel Plate Tailored for Improved Radiation Embrittlement Resistance **PVT 111**

In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**

Laminar Flow in the Entrance Region of Parallel Plates (BN) **AM 186**

Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**

Large Deflections of Elliptic Plates Exhibiting Rectilinear Orthotropy and Placed on Elastic Foundation (BN) **AM 690**

Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**

Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate (TN) **HT 531**

Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**

Modal Coefficients for the Axisymmetric Response of Thin Circular Plates (BN) **AM 511**

Multiple Fracture of Plates Under Localized Impulsive Loading (76-APM-H) **AM 33**

Note on the Large Deflections of Irregular Shaped Plates by the Method Conformal Mapping (BN) **AM 356**

Numerical Study of Some Three-Dimensional Laminar Free Convective Flows (76-HT-34) **HT 570**

A Singularity Approach to Circular Plates (76-DE-28) **I 1176**

The Squeezing of a Fluid Between Two Plates (76-WA/APM-14) **AM 579**

Thermal Buckling of Orthotropic Plates (BN) **AM 361**

On the Three-Dimensional Theory of Cracked Plates (D) (AC) **AM 374**

Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**

Platinum Resistance Thermometer

Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**

Platoon Leader Control

Emergency Control of Vehicle Platoons: System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**

Platoons

Emergency Control of Vehicle Platoons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**

Plesset, M. S. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (D) **F 95**; (AC) **F 96**

Pletcher, R. H. A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) **F 568**; (D) **F 570, 571**; (AC) **F 572**

Plexiglass Cylinders

An Experimental Study of Package Cushioning for the Human Head **AM 469**

Plotkin, A. Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**

Plug Bearings

The Hydrodynamics of a Plug Bearing (75-Lub-36) **L 433**

Plume Models

Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**

Plunge Grinding

Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**

Plunkett, R. *(reviewer)* Formulas for Stress and Strain (BR) **AM 522**

Pneumatic Pressure

Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves (TB) **DS 316**

Pneumatic Tube Systems

Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) **F 224**

Pneumatic Tubes

Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 583, 584**; (AC) **F 585**; (Er) **F 583**

Po, J. K. A Reynolds Stress Model for Turbulent Corner Flows—Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**

Point Contacts

Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (75-Lub-11) **L 223**; (D) (AC) **L 228**; Part II—Ellipticity Parameter Results (75-Lub-12) **L 375**; (D) **L 381, 382**; (AC) **L 382**

Point Force Solution

Point Force Solution for an Infinite Transversely Isotropic Solid (76-WA/APM-18) **AM 608**

Point Impact Loading

Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**

Point Loading

A Comprehensive Study of the Fixed Edge Bending Moments of Thin Rectangular Cantilever Plates Under Point Loading (75-WA/DE-1) **I 766**

Pointwise Estimates

Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**

Pole Concept

Eccentric Limit Load on Fasteners (75-WA/DE-6) **I 773**

On Eccentrically Loaded Fasteners (75-WA/DE-9) **I 776**

Policastro, A. J. Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Pollard, A. Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**

Pollutant Concentration

Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Polvanich, N. Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**

Polycrystal Grit

An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) **I 189**

Polycrystalline Aluminum

Laws for Work-Hardening and Low-Temperature Creep **MT 76**

Polycrystalline Metals

Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**

Polymer Additives

Effect of Polymer Additives on Jet Cavitation (76-FE-A) **F 106**; (D) **F 111**; (AC) **F 112**

Polynomial Regression Analysis

An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**

Polynomials

A Rational Finite Element E[illegible]is (BR) **L 635**

Ponter, A. R. S. Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**; A Theoretical and Experimental Investigation of Creep Problems With Variable Temperature (76-WA/APM-25) **AM 639**

Pook, L. P. *(author)* Metal Fatigue (BH) **MT 96**

Pool, E. B. Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Pool Boiling

A Comprehensive Model for Nucleate Pool Boiling Heat Transfer Including Microlayer Evaporation **HT 623**

Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

Popeck, R. A. Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) **P 487**

Popelar, C. Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**

Popov, E. P. Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**

Popp, H. G. Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Population Dynamics

Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**

Porosity

MHD Pipe Flow With Variable Wall Porosity (BN) **AM 172**

Strength, Permeabilities, and Porosity of Oilwell Foam Cement (75-Pet-10) **I 1103**

Porous Bearings

Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**

Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**

Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**

Porous Disks

Flow Due to Eccentric Rotating a Porous Disk and a Fluid at Infinity (76-APM-M) **AM 203**

Porous Elastic Cylinders

Transient Filtration in a Porous Elastic Cylinder (76-WA/APM-16) **AM 594**

Porous Layers

Convective Heat Transfer in a Liquid Saturated Porous Layer (76-APM-T) **AM 249**

Porous Media

Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**; (Er) **HT 302**

Similarity in Transient High Speed Gas Flow Through Porous Media (TB) **F 567**

Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Porous Plate Channels

Parallel Porous Plate Channel Flow Characteristics Resulting from Nonuniform Entry Velocity Profiles (D) (AC) **F 125**

Porous Plates

Transient Boundary Layers Between Porous Plates (76-WA/APM-32) **AM 555**

Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**

Porous Slabs

Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**

Porous Solid Fuels

An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Porous Surfaces

Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**

Porous Thrust Pads

Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**

Porter, B. Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**

Porter, R. Heat and Mass Transfer From Freely Falling Drops (D) **HT 339**; (AC) **HT 340**

Positive Displacement Machinery

Is There Any Fluids Engineering Challenge Left In Positive Displacement Machinery? (Op) **F 142**

Potential Flow

Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**

Potts, P. D. A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) **I 1301**

Powder Forging
Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**
Powders
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**
Powell, J. D. Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**
Power Collectors
Dynamics of a Power Collector With Friction Dampers (75-DET-30) **I 306**
Power Lines
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
Power Plants
Analysis of Large Dry Cooling Towers With Power-Law Heat Exchanger Performance (75-WA/HT-46) **HT 345**
On the Application of Modern Control to Power Plants (F) **DS 320**
Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**
Techniques for Noise Exposure Control in Existing Power Plants (75-WA/Pwr-6) **P 487**
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**
Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**
Power Ratings
V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**
Power Spectral Density
Analytical Model for Guideway Surface Roughness **DS 425**
Power Stations
Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**
Pozzi, A. Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**
Pragmatic Information Measures
Use of a Pragmatic Information Measure as an Aid in the Design of Interactive Graphic Displays (75-DET-88) **I 118**
Prahlad, T. S. A Note on the Peak of Johnston's Triangular Model in Three-Dimensional Turbulent Boundary Layers (TB) **F 577**
Prakash, J. Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**; Squeeze Film Theory for Micropolar Fluids (75-LubS-5) **L 139**; (D) **L 144**
Prandtl Numbers
Turbulent Transport to a Rotating Cyclinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Prasad, S. N. Elasticity Solution of Deep Beam Under Settlement of Supports (76-WA/APM-23) **AM 613**; On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**
Prathap, G. The Inelastic Large Deformation of Beams (BN) **AM 689**
Precision Insertion Operations
Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**
Precursory Cooling
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 401**
Preiss, G. Evaporation From a Capillary Tube (76-HT-NN) **HT 178**
Preloaded Bolts
Development of Design Charts for Bolts Preloaded up to the Plastic Range (75-DE-B) **I 849**
Press-Fitted Joints
Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) **I 137**
Pressure
Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure (BN) **AM 517**
Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**
Pressure Development
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) **AM 13**
Pressure Distribution
Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**
An Experimental Study of Package Cushioning for the Human Head **AM 469**
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**
Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**
Pressure Drop Characteristics
An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**
Collection Efficiency and Pressure Drop of Needle Punched Filters (75-Tex-5) **I 675**
Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**
Pressure Fluctuations
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**
Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**
Pressure Gradients
Application of a General Boundary Layer Analysis to Turbulent Boundary Layers Subjected to Strong Favorable Pressure Gradients (D) **F 129**; (AC) **F 130**
Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**
The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**
Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) **F 443**
A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**
Pressure Loss Coefficients
Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade (TB) **P 554**
Pressure Losses
Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**
Pressure Measurements
Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Pressure Perturbation
Pressure Perturbation in EHD Contacts Due to an Ellipsoidal Asperity (75-Lub-2) **L 8**
Pressure Sensors
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**
Pressure Surges
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**
Pressure Vessel Components
On the Use of Finite Elements in Fracture Analysis of Pressure Vessel Components (75-PVP-20) **PVT 8**
Pressure Vessel and Piping Codes
The ANSI B31 Code for Pressure Piping—Its Past, Present, and Future **PVT 92**
Buckling Rules for Nuclear Components—Code Case 1592 **PVT 229**
Codes for Concrete Reactor Vessels and Containments **PVT 326**
Elevated Temperature Design—Development and Implementation of Code Case 1592 **PVT 222**
An Introduction to Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code **PVT 231**
New Rules for Construction of Section III, Class 1 Components for Elevated Temperature Service **PVT 214**
The Tubular Exchanger Manufacturers Association and Industry **PVT 185**
Pressure Vessel Research Committee
Long-Range Plan for Pressure Vessel Research—Fourth Edition **PVT 242**
Pressure Vessel Steels
Improved 2¼ Cr-1 Mo Pressure Vessel Steel Through Electroslag Remelting (76-Pet-1) **PVT 298**
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**
Pressure Vessels
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**
Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) **PVT 266**
Pressure Viscosity
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**
Pressurization
Effect of Pressurization on the Vibration Isolation Capability of SqueezeFilm Bearings (75-DET-70) **I 109**; (Er) **I 736**
Elastic Crack Propagation Along a Pressurized Pipe (75-PVP-15) **PVT 2**
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**
Pressurized Pipelines
Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (D) **PVT 323**; (AC) **PVT 324**
Pressurized Vessels
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**
Preview Control
"Optimum Linear Preview Control With Application to Vehicle Suspension"—Revisited (76-Aut-PP) **DS 309**
Price, F. A. An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**
Price Level Stabilization
Price Level Stabilization Experiments Using the Dynamic Phillips Curve Concept (76-Aut-T) **DS 68**
Price, T. W. The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**
Primrose, E. J. F. On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**; Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**
Prince, D. C. Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (D) **P 255**; (AC) **P 257**; Surge and Rotating Stall in Axial Flow Compressors—Part II: Experimental Results and Comparison with Theory (D) **P 215**; (AC) **P 216**
Prince, T. A Finite-Element Method for Through Flow Calculations in Turbomachines (D) (AC) **F 419**
Printed Circuit Boards
Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) **I 137**
Probabilistic Design
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**
Probe Methods
Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**
Process Identification
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**
Processed Municipal Waste
Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**
Product Design
Product Design Implications of New High-Speed Milling Techniques (76-DE-22) **I 1170**
Production
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**
Products
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**
Table of Integrals, Series, and Products (BR) **L 479**
Profile Energy Analysis
Current Profile Energy and Ocean Moorings (75-WA/OcE-5) **I 558**
Profiled Rolling Elements
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**

Profilometry
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Profit Criteria
Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) **I 217**
Profit Maximization
Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**
Profos, P. Professor Stodola's Contribution to Control Theory (AH) **DS 119**
Programmed Loading
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**
Projectiles
Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity (TB) **I 381**
Projection Methods
A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**
Prolate Spheroids
Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**
Propagation
Nonlinear Propagation of Wave-Packets on Fluid Interfaces (76-WA/APM-11) **AM 584**
Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Propane-Air Flame
The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**
Prosthetic Aortic Valves
Statistical Analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**
Prototypes
Guide Vane Vibrations Caused by Wakes and Blower—Part 2: Prototype (75-DET-61) **I 956**
Przirembel, C. E. G. Generalized Flow Across an Abrupt Enlargement (D) **P 333**; (AC) **P 334**
Pseudoforce Methods
Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**
Pseudostatistical Techniques
A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**
Pulsatile Flow
Experiments on Parametric Resonance of Pipes Containing Pulsatile Flow (76-APM-35) **AM 198**
An Experimental and Theoretical Study of Transitional Turbulent Pulsatile Flow in a Channel (76-APM-MM) **AM 559**
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**
Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**; (D) **F 778**; (AC) **F 780**
Pulsating Flow Conditions
Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**
Pulsators
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**
Pulse Reflection
Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Pulses
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**
Pumps
An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**
Optimal Selection of Pumps in an Hydraulic Network (75-FE-21) **F 2**
Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) **F 674**; (D) **F 679, 680**; (AC) **F 680**
Puri, P. Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**
Putnam, A. The Acoustically Excited Flame (D) **P 157**; (AC) **P 158**
Pyrites
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) **P 517**
Pyun, J. J. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Q

Qayyum, M. A. Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Quach, V. B. Investigation on the Role of Workpiece Grain Size in Electrochemical Machining Process (75-Prod-25) **I 360**
Quasi-Upper Bounds
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**
Quiescent Ambients
Prediction of Turbulent Jets in Coflowing Quiescent Ambients (D) **F 332**; (AC) **F 333**
Quinlan, A. V. Some Simple Nonlinear Dynamic Models of Interacting Element Cycles in Aquatic Ecosystems (76-Aut-W) **DS 6**

R

Rabins, J. + M. Jean Baptiste Fourier, 1768–1830 (AH) **DS 123**
Radhakrishnan, V. M. A Parametric Approach to Cyclic Creep (76-APM-E) **AM 28**
Radial Discharge Impellers
Detailed Flow Investigations Within a High-Speed Centrifugal Compressor Impeller (76-FE-13) **F 390**; (D) **F 399, 400**; (AC) **F 401**
Radial Flow Turbines
Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**
Radial Forging
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**
Radial Inflow Turbines
Losses in Radial Inflow Turbines (76-FE-9) **F 364**; (D) **F 371, 372**; (AC) **F 372**
Radial Lines
The Interaction of Collinear Arrays of Griffith Cracks on Two Radial Lines (75-DET-124) **I 1086**
Radial Loads
Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) **I 375**
On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**
Radial Velocity
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
Radial Work Redistribution
Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**
Radiant Heating
Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating (TN) **HT 678**
Radiating Fin Arrays
Optimization of Radiating Fin Arrays With Respect to Weight **HT 643**
Radiation
Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Radiation Heat Transfer Through Molecular Gases at Large Optical Depth (TN) **HT 310**
Radiation Embrittlement Resistance
Further Observations on A533-B Steel Plate Tailored for Improved Radiation Embrittlement Resistance **PVT 111**
Radiation Heat Transfer
Radiation Heat Transfer Through Multiband Molecular Gases **HT 638**
Radiation Loss
Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss (TN) **HT 150**
Radiative Properties
Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**
Radiative Transport
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**
Radioactive Decay
Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**
Radioactive Materials
Failure Analysis of a Redundant Reeving Hoist (76-DE-21) **I 1166**
Radiosity
A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity (TN) **HT 148**
Radwan, H. R. Nonlinear Vibrations of Thin Cylinders (BN) **AM 370**
Ragsdell, K. M. Optimal Design of a Class of Welded Structures Using Geometric Programming (75-DET-86) **I 1021**; A Survey of Optimization Methods Applied to the Design of Mechanisms (75-DET-95) **I 1036**
Raithby, G. D. Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**; Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**; Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**; Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**; Parallel Porous Plate Channel Flow Characteristics Resulting from Nonuniform Entry Velocity Profiles (D) (AC) **F 125**
Raj, R. Crack Initiation in Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**; Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**
Rake Surfaces
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Ramachandran, J. Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**
Ramberg, S. E. Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**
Ramjee, V. Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**; Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**
Random Cell Models
A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters (BN) **AM 184**
Random Differential Equations
A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**
Random Errors
The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**
Random Excitation
Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**
Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**
Random Loading
Estimation of Cumulative Fatigue Damage Under Random Loading (75-DE-E) **I 348**
Random Variables
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**

Random Vibrations
Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**
Time Series Methods for the Synthesis of Random Vibration Systems (76-APM-A) **AM 159**
Rankin, G. W. Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) **F 476**
Ranov, T. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (D) **F 161**; (AC) **F 162**
Rao, D. K. Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**
Rao, M. S. M. Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Rao, S. S. Determination of Optimum Machining Conditions—Deterministic and Probabilistic Approaches (75-Prod-K) **I 354**
Rashed, M. I. The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**
Rate-Independent Plasticity
Plastic Internal Variables Formalism of Cyclic Plasticity (76-WA/APM-21) **AM 645**
Rau, C. A. The Modeling of Flow Concentration in Two-Phase Materials (75-Mat-7) **MT 180**
Ray, A. A Nonlinear Dynamic Model of a Once-Through Subcritical Steam Generator (76-Aut-M) **DS 332**
Ray, G. D. Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics (TB) **F 580**
Ray, S. Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**
Ray Theory
Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Reacting Flow
Mixing and Reacting Flow Characterization (D) (AC) **F 136**
Turbulent Mixing and Reacting Flow Characterization (Er) **F 198**
Reactor Fuel Elements
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**
Reactors (LMFBR)
Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**
High Strain Rate Tensile Properties of Annealed 2¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**
Laminar Natural Convection About Downward Facing Heated Blunt Bodies to Liquid Metals (76-HT-HH) **HT 208**
Reactors (PWR)
AN Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**
Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**
Reactor Vessels
Code for Concrete Reactor Vessels and Containments **PVT 326**
Reattached Regions
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Receiver Pressure
The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**; (D) **I 1375**
Reciprocal Relations
Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**
Recovery Creep Behavior
Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/APM-6) **AM 445**
Recovery Creep Models
A Recovery-Athermal Glide Creep Model (75-Mat-1) **MT 114**; (D) **MT 121**; (AC) **MT 122**
Rectangles
Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**
Rectangular Cavities
A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity (TN) **HT 148**
Heat Transfer in Laminar Flow Past a Rectangular Cavity With Fluid Injection (75-HT-58) **HT 226**
Rectangular Channels
The Effect of Heater Size, Location, Aspect Ratio, and Boundary Conditions on Two-Dimensional, Laminar, Natural Convection in Rectangular Channels (76-HT-W) **HT 194**; (Er) **HT 513**
Rectangular Cross Section
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**
Rectangular Ducts
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**
Rectangular Plates
A New Look at the Superposition of Boundary Conditions in the Evaluation of Temperature Distribution in a Finite Rectangular Plate With Adiabatic Faces at Steady State (TN) **HT 527**
Rectangular Regions
Experimental Investigation of Natural Convection in Inclined Rectangular Regions of Differing Aspect Ratios (75-HT-62) **HT 67**
Rectilinear Frontal Gap
Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**
Reddecliff, J. M. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**
Redondi, G. On the Interpretation of the Acoustic Emission Signals (75-WA/PVP-20) **PVT 199**
Reduced-Order Observers
Design of Deadbeat Controllers and Reduced-Order Observers for Linear Multivariable Discrete-Time Plants (76-Aut-L) **DS 152**
Redundant Reeving System
Failure Analysis of a Redundant Reeving Hoist (76-DE-21) **I 1166**
Reed, D. B. On Numerical Solution of the Three-Dimensional Vorticity Equation (TB) **F 770**
Reed, L. D. Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**
Reed, W. S. Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**
Reed Valves
A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**
Refrigeration Compressors
A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**
Refuse Firing
Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**
Regeneration Theory
The Regeneration Theory **DS 128**
Regenerative Drive
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**; Part 2: Overall System Model (76-RT-2) **I 744**; Part 3: System Evaluation (76-RT-3) **I 751**; Part 4: Overall System Performance (76-RT-4) **I 756**
Reid, M. W. Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**
Reil, T. H. An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**
Reilly, R. S. The Vorbix Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**
Reischman, M. M. Calculation of Velocity Profiles in Drag-Reducing Flows (TB) **F 563**
Reismann, H. Dynamics of Initially Stressed Plates (76-APM-29) **AM 304**
Reissner, E. On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**
Reistad, G. M. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**
Reliability Analysis
On the Use of The Extreme Value Distribution in Reliability Analysis and Design (75-DET-123) **I 1080**
Reliability Challenge
The Challenge of Reliability in Steam Turbine Control (F) **DS 321**
Relief Valves
Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**
Remote Thermocouple Sensors
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**
Research Data
ASME Catalog of Motion Pictures of Research Data in Fluid Mechanics and Heat Transfer **F 151**
Reservoirs
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Residual Bending Stresses
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) **I 196**
Residual Elements
Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**
Residual Fuels
Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**
Residual Microstresses
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Residual Shaft Bow
Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**
Residual Strain
Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**
Residual Stresses
On the Analysis of Residual Stresses Introduced in Sheet Metal by Thermal Shock Treatment (76-APM-13) **AM 117**
Resitaritis, M. R. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**
Resonance
Parametric and Combination Resonances of a Pipe Conveying Pulsating Fluid (D) **AM 376**; (AC) **AM 377**
Resonant Frequencies
Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**
Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**
Resonant Vibrations
Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**
Response Spectra
Spectral Analysis of Complex Systems Supported at Several Elevations **PVT 162**
Response Surface Methodology
Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**
Retracting Vane Elements
Development of a Retracting Vane/Centrifugal Main Fuel Pump for Gas Turbine Engines (76-FE-1) **F 619**; (D) (AC) **F 625**
Return Vectors
A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) **I 816**
Reverse Thrust Operation
Ground Vortex—Limit to Engine/Reverser Operation (75-GT-3) **P 258**; (D) **P 263**; (AC) **P 264**
Rewetting
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**
Reynen, J. On the Use of Finite Elements in Fracture Analysis of Pressure Vessel Components (75-PVP-20) **PVT 8**
Reynolds, J. D. Moisture Diffusion in Fiber Reinforced Plastics (76-Mat-G) **MT 92**
Reynolds Numbers
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**
On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**
Reynolds Stress Model
A Reynolds Stress Model for Turbulent Corner Flows—Part I:

Development of the Model (76-FE-C) **F 261**; Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**

Rhodes, R. G. Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Riaz, M. R. A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**; (Er) **P 539**

Ribando, R. J. Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Ribbed Diffusers

Flow Regimes in Two-Dimensional Ribbed Diffusers (D) **F 126**; (AC) **F 127**

Ribbed Table Optimization

Optimization of a Ribbed Table for Minimum Weight and Minimum Deflection (75-DE-K) **I 30**

Ribeiro, M. M. Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**

Rice, J. R. *(reviewer)* Three-Dimensional Crack Problems (BR) **AM 522**

Rice, W. Flow Distribution Manifolds (D) **F 665**; (AC) **F 666**; Laminar Compressible Flow Between Rotating Disks (D) **F 388**; (AC) **F 389**; Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (D) (AC) **F 223**; Performance of Hydraulic Gas Compressors (76-FE-5) **F 645**; (D) **F 652, 653**; (AC) **F 653**

Rice, W. B. An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**

Richards, R., Jr. Harmonic Holes—An Inverse Problem in Elasticity (76-APM-CC) **AM 414**

Richardson, P. D. Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (D) **F 281**; (AC) **F 282**

Richmond, O. Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) **AM 49**

Ride Quality

On Using the ISO Standard To Evaluate the Ride Quality of Broad-Band Vibration Spectra in Transportation Vehicles (TB) **DS 440**

Rightmire, G. K. An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**

Rigid Bodies

Measurement of Angular Acceleration of a Rigid Body Using Linear Accelerometers (D) **AM 377**; (AC) **AM 378**

Rigid Cylinders

Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) **AM 419**

Rigid Flange

On Optimal Bolt Preload (75-WA/DE-14) **I 779**

Rigid Planes

Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**

Rigid Plastic Methods

Plastic Failure of Ductile Beams Loaded Dynamically (75-WA/DE-3) **I 131**

Rigid Plastic Plates

Dynamic Response of Circular Rigid-Plastic Plates Resting on Fluid (76-APM-11) **AM 102**

Rigid Rectangular Foundations

Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**

Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**

Rigid Support

Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

Rigid Tubes

Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**

Rigid-Plastic Beams

Dynamic Behavior of Ideal Fibre-Reinforced Rigid-Plastic Beams (76-APM-21) **AM 319**

Ring Membranes

The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

Ring Spinning Machines

Balloon Collapse in Ring-Spinning (75-Tex-2) **I 658**

The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**

Ring Travelers

Spinning Frame Noise Sources (75-Tex-7) **I 840**

Ring Vibrations

On the Theories of Ring Vibrations (BN) **AM 503**

Rings

Design Coefficients for Rings Loaded Out-of-Plane (75-WA/DE-2) **I 369**

Displacement of a Ring Subject to Uniform Radial Loads (75-WA/DE-5) **I 375**

Ritz Theory

Hamilton, Ritz, and Elastodynamics (76-APM-R) **AM 684**

Road Vehicle Engines

Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**

Roark, R. J. *(author)* Formulas for Stress and Strain (BR) **AM 522**

Roberts, W. B. A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (D) (AC) **P 239**

Robertson, J. M. Flow Development in a Parallel Plate Channel (D) **L 155**; (AC) **L 156**; A Separated and Reattached Flow on a Blunt Flat Plate (D) **F 84**; (AC) **F 86**

Robinson, F. J. An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotar Expanders and Pumps (75-WA/DE-10) **I 161**

Robots

Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**

Rock Melting Drills

Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) **HT 485**

Rocke, R. D. Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**

Rocker Mechanisms

An Experimental Investigation of the Dynamic Behavior of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**

Rockwell, D. *(reviewer)* "Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Rockwell, D. O. Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

Rod Bundles

Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**; (Er) **HT 508**

Rodabaugh, E. C. WRC Bulletin 208—August 1975: Review of Data on Mitre Joints in Piping to Establish Maximum Angularity for Fabrication of Girth Butt Welds **PVT 188**

Rodeman, R. Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Rodgers, C. Effects of System Rotation on the Performance of Two-Dimensional Diffusers (D) (AC) **F 429**

Rogers, C. B. Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**

Rodini, B. T. In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**

Rods

Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**

Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**

Wave Propagation in Finite Rods of Voigt Material (BN) **AM 182**

Rohde, S. M. Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (D) **L 179**; (AC) **L 180**; Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**; On the Dynamic Behavior of Hybrid Journal Bearings (75-Lub-3) **L 90**; Isothermal Elastohydrodynamic Lubrication of Point Contacts: Part 1—Theoretical Formulation (D) (AC) **L 228**; *(reviewer)* A Rational Finite Element Basis (BR) **L 635**; A Theoretical Investigation of the Multileaf Journal Bearing (76-APM-23) **AM 237**

Rohlik, H. E. Losses in Radial Inflow Turbines (D) (AC) **F 372**

Rohsenow, W. M. Active Sites in Boiling (76-HT-JJJ) **HT 401**; Nucleation Site Activation in Saturated Boiling (D) **HT 340**; (AC) **HT 341**

Roll Extrusion

Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**

Roller Bearings

Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) **L 564**; (D) **L 572, 573**; (AC) **L 573**

An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) **L 538**; (D) **L 543, 544**; (AC) **L 546**

Roller Wire Design

The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**

Rollers

The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**

Rolling

A Simplified Model for the Elastohydrodynamic Traction Between Rollers (76-Lub-6) **L 357**; (D) **F 361**

Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Rolling Bearings

Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**

Rolling Contact

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**

Rolling Element Bearings

The Lubrication of Lightly Loaded Cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**

Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

Rolling Elements

A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**

Rolling/Sliding Contacts

A Critical Survey of High Pressure Lubricant Models (75-Lub-15) **L 258**; (D) **L 265, 266**; (AC) **L 266**

Rolling Speed

Traction Characteristics of a MIL-L-7808 Oil **L 607**; (D) (AC) **L 612**

Root Contour Method

Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**

Root, L. E. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 544**; (AC) **L 546**

Root, R. R. A Survey of Optimization Methods Applied to the Design of Mechanisms (75-DET-95) **I 1036**

Roseau, M. *(author)* Asymptotic Wave Theory (BR) **AM 701**

Rosenblat, S. *(reviewer)* Perturbation Method in Fluid Mechanics (BR) **AM 189**

Rosenthal, F. The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**

Ross, D. C. An Experimental Investigation of Burn Injury in Living Tissue (75-HT-14) **HT 292**

Rossie, J. P. Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (D) **P 347**; (AC) **P 348**

Rotary Bending

A Cumulative Damage Rule Based on the Knee Point of the S-N Curve (76-Mat-E) **MT 316**

Rotary Expanders/Pumps

An Analysis of Epitrochoidal Profiles With Constant Difference Modification Suitable for Rotary Expanders and Pumps (75-WA/DE-10) **I 161**

Rotary Inertia

Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**

Rotary Vane Compressors

Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**

Rotating Bending
Rotating Bending Fatigue Tests in a Hydrostatic Environment (TB) **MT 380**
Rotating Concentric Cylinders
Momentum Integral Solution of Developing Flow in an Annulus With a Rotating Inner Cylinder (TB) **F 558**
Rotating Cylinders
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Rotating Disks
The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**
An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**
Finite Elastic Deformation of an Annular Rotating Disk (76-Mat-A) **MT 375**
Laminar Compressible Flow Between Rotating Disks (76-FE-11) **F 382**; (D) **F 388**; (AC) **F 389**
Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**
Rotating Machinery
Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Rotating Medium
Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**
Rotating Rings
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**
Rotating Shafts
Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**
Rotating Shutters
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**
Rotating Spheres
The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**
Rotating Stall
Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model (75-GT-9) **P 190**; (D) **P 212, 213**; (AC) **P 216**; Part II: Experimental Results and Comparison With Theory (75-GT-10) **P 199**; (D) **P 212–215**; (AC) **P 216**
Rotating Turbomachinery Passage
A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbomachinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**
Rotation
Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**
Rotational Velocity
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
Rotatory Inertia
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Roth, B. Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**
Rothe, P. H. Comprehensive Design of Axisymmetric Wind Tunnel Contractions (D) **F 131**; (AC) **F 132**; Effects of Syytem Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**; Liquid Jet Pumped by Rising Gas Bubbles (D) **F 56**; (AC) **F 57**
Rotor Balancing
Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**
Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DET-73) **I 988**
A Linear Programming Approach for Balancing Flexible Rotors (75-DET-94) **I 1030**
Rotor-Bearing Systems
A Note on Blade Loss Dynamics of Rotor-Bearing Systems (Er) **I 1329**
Rotor Bearings
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**
A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**
Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**
Rotor Blades
Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) **P 480**
Transonic Flow Around Rotor Blade Elements (D) (AC) **F 122**
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**
Rotor Dynamics
Short Bearing Analysis Applied to Rotor Dynamics—Part I: Theory (75-Lub-30) **L 47**; Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**
Rotor-Pad Systems
Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**
Rotor-Shaft Systems
Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**
Rotor Supports
Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) **P 393**; (D) **P 399**; (AC) **P 400**
Rotordynamics
A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) **I 876**
Rotors
Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) **L 57**
A Modal Transient Simulation Model for Flexible Asymmetric Rotors (75-DET-34) **I 312**
The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**
Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**
Vibration of an Asymmetrically Mounted Rotor With Gyroscopic Effects (75-DET-58) **I 327**
Rough Surfaces
The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**
Rough Interfaces
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**
Roughness Elements
Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**
Roundness Error
The Effect of Chucking Methods on Roundness Error in the Boring Process (75-WA/Prod-34) **I 233**
Rouse, R. J., Jr. Emergency Control of Vehicle Platooons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**; System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**
Routh Arrays
System Stability by Improved Routh and Jury Arrays **DS 206**
Rowe, C. N. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (D) **L 316**; (AC) **L 317**; *(contributor)* List of Theses Topics in Tribology—II: Boundary Lubrication (76-Lub-G) **L 396**
Roy, R. P. An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**
Rubber Tire Vehicles
On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**; (Er) **DS 394**
Rubenstein, C. An Analysis of Tool Life Based on Flank-Face Wear—Part 1: Theory (75-WA/Prod-28) **I 221**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) **I 227**
Rubin, E. The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**
Rubin, S. G. The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**
Rubinsky, B. Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (76-HT-PP) **HT 514**
Rudinger, G. Effect of Velocity Slip on the Burning Rate of Fuel Particles (Er) **F 363**; The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (D) **F 486**; (AC) **F 487**; Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**; Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia (D) (AC) **F 713**; Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**; Two-Phase Flow Through Normal Shock Wave (D) (AC) **F 135**
Rumbarger, J. H. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (D) **L 275**; (AC) **L 276**; Trends in Concentrated Contacts (Op) **L 481**
Running Clearance
Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**
Runstadler, P. W., Jr. Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 399**; (AC) **F 401**
Rupture Forces
Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**
Rupture Strength
The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**
Rusek, P. Maximum Rate of Profit Criteria in Machining (75-WA/Prod-22) **I 217**
Rush, R. H. Dynamically Coupled Motion of Surface-Fluid-Shell System (BN) **AM 507**
Russell, L. M. Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**
Russell, T. E. Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (D) **L 573**; (AC) **L 574**
Ruud, F. O. Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) **F 674**; (D) **F 679, 680**; (AC) **F 680**
Rylander, H. G. Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**; Inception of Cavitation From a Solid Surface (75-WA/DE-13) **I 145**
Ryzhik, I. M. *(author)* Table of Integrals, Series, and Products (BR) **L 479**

S

Saad, N. R. Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**
Sabbagh, J. A. Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**; Laminar Film Condensation Heat Transfer in the Presence of Electric and Magnetic Fields (Er) **HT 686**
Saboya, F. E. M. Experiments on a Three-Row Fin and Tube Heat Exchanger (TN) **HT 520**
Sachs, H. K. On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**; (Er) **DS 394**
Saczalski, K. J. A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**
Sadek, M. M. Dynamic Acceptance Tests for Horizontal Tool Chatter (75-DET-21) **I 919**

Sadler, J. P. Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**

Safety

The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) **I 761**

Safety Valves

Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) **F 199**; (D) **F 206**; (AC) **F 207**

Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**

Saha, P. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) **HT 616**

Saint-Venant's Principle

Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**

Saiy, M. Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**

Salimonu, D. O. Flow Development in a Parallel Plate Channel (D) **L 154**; (AC) **L 156**

Sallet, D. W. Fluid Forces Induced by Vortex Shedding (D) **F 24**; (AC) **F 25**

Salman, F. K. Dynamic Properties of a Moving Thread Line (75-DE-N) **I 868**

Samanta, S. K. A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) **AM 97**

Sampath, S. G. Steady-State Crack Propagation in Pressurized Pipelines Without Backfill (75-PVP-39) **PVT 56**; (D) (AC) **PVT 65**

Sanborn, D. M. A Critical Survey of High Pressure Lubricant Models (D) (AC) **L 266**; Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (D) **L 507**; (AC) **L 508**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**; Prediction of Ball Motion in High-Speed Thrust-Loaded Ball Bearings (D) (AC) **L 470**

Sánchez, D. A. An Approximate Periodic Solution of a Weakly Nonlinear Wave Equation (BN) **AM 504**

Sandstede, H. Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**

Sandwich Beams

Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**

Sandwich Panels

Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**

Sandwich Plates

Loss Factors and Resonant Frequencies of Periodic Damped Sandwich Plates (75-DET-19) **I 75**

Sanford, R. J. *(reviewer)* Holographic Nondestructive Testing (BR) **AM 523**; *(reviewer)* Optical Holography (BR) **AM 523**

Sargent, L. B., Jr. A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (D) **L 431**; (AC) **L 432**

Sarlat, D. Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

Sarma, P. K. Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**

Sarpkaya, T. Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**

Sasaki, M. Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**

Sastry, M. S. The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**

Sastry, V. S. A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Sato, K. Buckling of an Elliptical Plate With Simply Supported Edge Under Uniform Compression (76-APM-AA) **AM 455**

Saturated Boiling

Nucleation Site Activation in Saturated Boiling (D) **HT 340**; (AC) **HT 341**

Saturated Vapors

Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**

Transient Melting of a Solid Heated by a Condensing Saturated Vapor—Case 1: Negligible Interface Curvature (Er) **HT 143**

Savery, C. W. Aerodynamic Design of Cooling Tower Drift Eliminators (D) (AC) **P 456**

Sawaragi, Y. The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Sayama, H. Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Scale Formation

Film Boiling in a Scaling Liquid (76-HT-MM) **HT 173**

Scanning Electron Microscope

Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Grinding of Glass: Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**

Scattering

Scattering of Water Waves by a Pair of Semi-Infinite Barriers (D) (AC) **AM 378**

Schachenmann, A. A. Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

Schatzberg, P. Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Scheffler, W. A. Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**

Schey, J. A. *(contributor)* List of Theses Topics in Tribology—II: Metal-Working Lubrication (76-Lub-G) **L 396**

Schlegel, J. C. Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

Schlieren Cinematography

Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Schmidt, F. W. Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) **HT 471**

Schmidt, R. Finite Deflections of a Circular Plate Sealing an Incompressible Liquid (BN) **AM 694**

Schmidt Numbers

Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**

Schmisseur, W. E. Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**

Schmitt, J. A. Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**

Schmitz, T. Analysis of a Platform for Measuring MOMENTS AND Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**

Schneck, D. J. Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**

Schneider, D. P. Optimal Selection of Pumps in an Hydraulic Network (75-FE-21) **F 2**

Schneider, G. E. Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates (TN) **HT 525**

Schneider, R. E. A Correction to Noncircular Duct Hot Patch Data (TN) **HT 332**

Schneyer, G. P. A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Schnurr, N. M. A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**; Optimization of Radiating Fin Arrays With Respect to Weight **HT 643**

Schofield, W. H. Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (D) **F 633**; (AC) **F 634**

Schrock, V. E. Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) **P 450**; (D) (AC) **P 456**; Heat and Mass Transfer From Freely Falling Drops (75-WA/HT-37) **HT 120**; Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Schuetz, R. L. *(reviewer)* An Introduction to Engineering Systems (BR) **DS 352**

Schwartz, I. R. *(assoc. editor)* "Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: Fan, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**

Scibbe, H. W. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**

Scientific Papers

Stability of Motion: A Collection of Early Scientific Papers by Routh, Clifford, Sturm and Böcker (BR) **DS 205**

Scoring Resistance

Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**

Scott, C. J. Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**; Decaying Annular Swirl Flow With Inlet Solid (75-FE-14) **F 33**

Scott, W. E. The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**

Scraped-Surface Heat Transfer

Heat Transfer Between a Moving Surface and a Flowing Medium **HT 659**

Scuba Divers

Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**

Seals

Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

On Reciprocating Toroidal Seals (75-WA/DE-20) **I 783**

Sears, W. R. Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion With Applications to Harmonic Oscillation (D) (AC) **F 778**

Seban, R. A. Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**

Secondary Flows

An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**

Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**

Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**

Secrist, D. A. An Analysis of Heat Transfer and Fade in Disk Brakes (75-DE-A) **I 385**

Sector Pad Bearings

The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

Sectored Cylinders

The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**

Seeley, S. *(author)* An Introduction to Engineering Systems (BR) **DS 352**

Seide, P. Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**; *(author)* Small Elastic Deformations of Thin Shells (BR) **AM 702**

Seireg, A. Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**; An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) **L 538**; (D) **L 543, 544**; (AC) **L 546**; Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**

Seismic Spectral Analysis

Spectral Analysis of Complex Systems Supported at Several Elevations **PVT 162**

Seizure

On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**

Seki, N. An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**; Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**

Semiactive Control

Semiactive Control of Multimode Vibratory Systems Using the ILSM Concept (75-DET-15) **I 914**

Semiautomatic Standardizing Machines

Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**

Semiempirical Analysis

Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**

Semi-Infinite Barriers

Scattering of Water Waves by a Pair of Semi-Infinite Barriers (D) (AC) **AM 378**

Semi-Infinite Strips
Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load (BN) **AM 188**
The Plane Solution for the Elastic Contact Problem of a Semi-Infinite Strip and Half Plane (76-WA/APM-17) **AM 603**
Semi-Open Channels
Velocity Distribution in Semiopen Channels (TB) **F 764**
Sen, A. K. Transfer Functions of Hyperbolic Distributed Parameter Systems (TB) **DS 318**
Senoo, Y. An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**
Sensors
Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**
Separated Flow
Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**
Two-Dimensional Method for Calculating Separated Flow in a Centrifugal Impeller (D) **F 333**; (AC) **F 335**
Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**
Separated Positions
Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 176**
Separated Regions
A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) **F 568**; (D) **F 570, 571**; (AC) **F 572**
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Separation
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**
Sequential Wall Jets
The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**
Series
Table of Integrals, Series, and Products (BR) **L 479**
Sernas, V. Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Servomechanisms
The Dynamic Characteristics of an Electro-Hydraulic Servovalve (76-Aut-QQ) **DS 395**
Fluid Power Servomechanisms (BR) **DS 204**
Set Gelatin
An Experimental Study of Package Cushioning for the Human Head **AM 469**
Sette, D. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (D) **F 95**; (AC) **F 96**
Severe Load
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**
Sfeir, A. A. The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**
Shaalan, M. R. A. The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades (TB) **F 759**
Shafir, M. The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**
Shaft Dynamic Behavior
Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) **P 393**; (D) **P 399**; (AC) **P 400**
Shaft Whirl
Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**
Shafts
Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**
Instabilities of an Asymmetric Rotor With Asymmetric Shaft Mounted on Symmetric Elastic Supports (76-DE-19) **I 1161**
Shah, P. C. Identification of Structures Through Records Obtained During Strong Earthquake Ground Motion (75-DET-77) **I 1347**
Shahinian, P. Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) **PVT 166**
Shallow Shells
The Fundamental Solution for a Shallow Shell With an Arbitrary Quadratic Midsurface (76-APM-V) **AM 286**
Shallow Spherical Shells
Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**
Shallow Translational Shells
Nonlinear Flexural Vibrations of Thin Shallow Translational Shells (BN) **AM 180**
Shallow Water Theory
Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**
Shampine, L. F. Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**
Shamsundar, N. Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**; Effect of Density Change on Multidimensional Conduction Phase Change **HT 550**
Shapiro, A. B. A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**; Optimization of Radiating Fin Arrays With Respect to Weight **HT 643**
Sharkey, R. L. A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**
Sharma, B. I. Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
Sharp-Edged Disks
Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**
Sharp-Edged Orifices
Orifice Cavitation and Its Effect on Spray Mixing **F 681**
Shavit, A. Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**
Shaw, M. C. The Abrasive Cut-off Operation With Oscillation (75-Prod-A) **I 410**; Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**; Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) **I 206**
Shear Deformation
Effects of Shear Deformation, Rotary Inertia, and Elasticity of the Support on the Resonance Frequencies of Short Cantilever Beams (75-GT-37) **P 79**
Shear Difference Methods
Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**
Shear Flow
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**
Shear Effects in Hot-Wire Measurements (TB) **F 771**
Shear Layers
An Approximate Method for Curved Shear Layers (TB) **F 328**
A Modified Law of the Wake for Turbulent Shear Layers (TB) **F 578**
Shear Rates
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) **F 488**
Shear Stress
Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**
Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**
Shear Waves
Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**
Shear-Bending Impact
In-Plane and Shear-Bending Impact of Laminated Composite Plates (76-APM-N) **AM 275**
Shearer, J. L. *(reviewer)* Fluid Power Servomechanisms (BR) **DS 204**
Shearing Stresses
Distribution of Shearing Stresses in an Orthotropic Cantilever (Er) **AM 524**
Shedding
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Sheet Flatness
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) **I 196**
Sheet Metals
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) **AM 117**
Sheet-Metal Forming
Some Considerations on the Formability Parameter in Sheet-Metal Forming (75-WA/Prod-16) **I 211**
Shell Models
Experimental Stress Analysis of Cylinder-to-Cylinder Shell Models and Comparisons With Theoretical Predictions (76-PVP-10) **PVT 283**
Shell Structures
Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**
Shell Theory
Small Elastic Deformations of Thin Shells (BR) **AM 702**
Shells
Aeroelasticity of Plates and Shells (BR) **AM 382**
Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**
Creep Buckling of a Complete Spherical Shell (76-WA/APM-8) **AM 450**
The Fundamental Solution for a Shallow Shell With an Arbitrary Quadratic Midsurface (76-APM-V) **AM 286**
Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) **AM 69**
Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**
Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**
Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**
Transient Response of Viscoplastic and Viscoelastic Shells Submerged in Fluid Media (76-APM-K) **AM 137**
The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**
Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**
Shells of Revolution
The Dynamic Response of an Elastic Shell of Revolution Submerged in an Acoustical Medium (BN) **AM 514**
Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**
Shen, F. C. T. The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
Shih, C. F. Fully Plastic Solutions and Large Scale Yielding Estimates for Plane Stress Crack Problems (76-Mat-P) **MT 289**
Shimogo, T. Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**; Dynamics of a Power Collector With Friction Dampers (75-DET-30) **I 306**
Ship Motion
Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**
Ship Propulsion Machinery
The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**
Shippy, D. J. Wave Propagation in Finite Rods of Voigt Material (BN) **AM 182**
Shirazi, M. A. Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**
Shirley Analysis System
Instrumental Procedures for Analysis of Nonlint Particles in Cotton (75-Tex-8) **I 845**
Shitzer, A. Analysis of a Stefan-Like Problem in a Biological Tissue Around a Cryosurgical Probe (76-HT-PP) **HT 514**
Shivamoggi, B. K. Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**
Shivashankara, B. N. Combustion Generated Noise in Gas Turbine Combustors (75-GT-27) **P 242**
Shock Treatment
On the Analysis of Residual Stresses Introduced in Sheet Metal by Thermal Shock Treatment (76-APM-13) **AM 117**
Shock Waves
Propagation of a Shock Wave Front Across a Curved Fluid-Solid Interface (76-WA/APM-9) **AM 589**
Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached

Shock Waves (75-GT-33) **P 247**; (D) **P 255, 256**; (AC) **P 257**
Two-Phase Flow Through Normal Shock Wave (D) (AC) **F 135**
Shoemaker, A. K. *(recipient)* Materials Division Best Paper Award **MT 1**
Shore Testing
The Shore Testing of Marine Gas Turbine Ship Propulsion Machinery (75-GT-29) **P 9**
Short Bearing Analysis
Short Bearing Analysis Applied to Rotor Dynamics—Part I: Theory (75-Lub-30) **L 47**; Part 2: Results of Journal Bearing Response (75-Lub-31) **L 319**
Short, R. E. The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**
Shukla, R. K. Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**
Shutters
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**
SI Units
Steam and Air Tables in SI Units (BR) **DS 108**
Sibley, L. B. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**; An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (D) **L 543**; (AC) **L 546**; The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 562**; (AC) **L 563**
Siddall, J. N. A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) **I 183**
Siddiqui, A. N. Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**
Side Leakage
Leakage-Free Journal Bearings (76-Lub-F) **L 441**
Siegel, R. Liquid Jet Pumped by Rising Gas Bubbles (75-FE-11) **F 49**; (D) **F 56, 57**; (AC) **F 57**
Signal Flow Graphs
An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**
Signal Transit Velocities
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) **F 443**
Signer, H. Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10^6 DN (76-LubS-16) **L 580**; Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**
Sigurdson, S. Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) **P 386**; (D) (AC) **P 392**
Sih, G. C. The Role of Fracture Mechanics in Design Technology (76-DET-58) **I 1243**; *(author)* Three-Dimensional Crack Problems (BR) **AM 522**
Silica Phenolic Ablators
Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**
Silicon
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**
Silicon Carbide
Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**
Silicon Nitride Balls
The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**
Siljaj, D. D. Alexander Michailovich (1857–1918) (AH) **DS 121**
Simandiri, S. Effect of Pressurization on the Vibration Isolation Capability of Squeeze Film Bearings (75-DET-70) **I 109**; (Er) **I 736**
Similtses, G. J. *(author)* An Introduction to the Elastic Stability of Structures (BR) **AM 383**
Simmonds, J. G. *(reviewer)* Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures (BR) **AM 523**; The Fundamental Solution for a Shallow Shell With an Arbitrary Quadratic Midsurface (76-APM-V) **AM 286**; Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**
Simmons, L. D. Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss (TN) **HT 150**
Simulation Methods
A Simulation Method of Establishing Fatigue Life Distribution (75-WA/DE-25) **I 183**
Simulation Models
A Modal Transient Simulation Model for Flexible Asymmetric Rotors (75-DET-34) **I 312**
Sinclair, G. M. *(recipient)* ASME Nadai Award **MT 1**
Singer, R. M. Behavior of Inert Gas Bubbles in Forced Convective Liquid Metal Circuits (76-HT-X) **HT 5**
Singh, A. Active Sites in Boiling (76-HT-JJJ) **HT 401**
Singh, A. K. Inelastic Response of Nuclear Piping Subjected to Rupture Forces (75-PVP-21) **PVT 98**
Singh, B. S. Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**
Singh, D. V. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (D) (AC) **F 162**; Load Capacity and Stiffness Considerations for Hydrostatic Journal Bearings (76-Lub-M) **L 629**; Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Singh, K. P. Application of Spiral Wound Gaskets for Leak-Tight Joints (D) **PVT 81**; (AC) **PVT 82**
Singh, P. P. Emission Results From Coal Gas Burning in Gas Turbine Combustors (75-GT-44) **P 88**; (D) (AC) **P 96**
Sinhasan, R. Load Capacity and Stiffness Considerations for Hydrostatic Journal Bearings (76-Lub-M) **L 629**; Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Single-Mass Rotors
A Note on Blade Loss Dynamics of Rotor-Bearing Systems (75-DET-56) **I 497**; (D) (AC) **I 504**
Single-Point Moorings
A Simple Model of Submarine Hoses in Single Point Moorings (BN) **AM 170**
Single-Point Tools
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Singularities
A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**
Sinha, P. Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**; Squeeze Film Theory for Micropolar Fluids (75-LubS-5) **L 139**; (D) **L 144**
Sinusoidal Disturbances
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**
Sinusoidal Loads
Predicting Natural Frequencies of a Hydrodynamically Lubricated Journal Bearing With Constant Oil Supply Pressure (75-DET-72) **I 980**
Sinusoidally Oscillating Fluids
Forces on Cylinders Near a Plane Boundary in a Sinusoidally Oscillating Fluid (76-FE-K) **F 499**; (D) **F 503**; (AC) **F 504**
Sisto, F. Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**
Sivaci, K. Investigation of the Plastic Properties of Certain Ferrous and Nonferrous Materials at High Temperature (75-WA/Mat-5) **MT 203**
Skew Four-Bar Mechanisms
On the Criteria for the Rotatability of the Cranks of a Skew Four-Bar Linkage (76-DET-26) **I 1285**
Ski Release Binding
A Preliminary Analysis of Ski Release Binding Dynamic Properties (76-Aut-BB) **DS 301**
Skin Friction
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**
Skyline Logging Dynamics
An Energy Method Determination of Large Cable Dynamics (76-APM-20) **AM 330**
Slab Methods
Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**
Slab Moving Speed
Thermal Analysis of a Fast-Moving Slab in Two Adjacent Temperature Chambers (TN) **HT 326**
Slag Friability
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**
Slender Jets
Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**
Slender Ships
Hydrodynamic Pressure Field on a Slender Ship Moving Over a High-Frequency Wavy Shallow Bottom (76-APM-22) **AM 232**
Sletten, R. Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**
Slide Feed Mechanism
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) **L 602**
Slider Bearings
Asymptotic Methods for an Infinite Slider Bearing With a Discontinuity in Film Slope (76-Lub-H) **L 446**
Lubrication by a Melting Solid (75-Lub-26) **L 22**
Slider-Crank Mechanisms
Analytical and Experimental Investigation of Elastic Slider-Crank Mechanisms (76-DET-18) **I 1266**
A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**
Sliding
The Lubrication of Lightly Loaded cylinders in Combined Rolling, Sliding, and Normal Motion—Part I: Theory (76-LubS-6) **L 509**; (D) **L 522**; (AC) **L 523**; Part II: Experimental (76-LubS-10) **L 517**; (D) **L 522**; (AC) **L 523**
On the Phenomenon of Separation During Compression and Frictional Sliding of an Elastic Rectangle (76-APM-25) **AM 268**
Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**
A Simplified Model for the Elastohydrodynamic Traction Between Rollers (76-Lub-6) **L 357**; (D) **F 361**
Sliding Contact
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**
Sliding Friction
Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**
Sliding Point Contacts
On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) **L 575**; (D) (AC) **L 579**
Slip
A Note on Slip in V-Belt Drives (TB) **I 1366**
Slip Curves
Traction Characteristics of a MIL-L-7808 Oil **L 607**; (D) (AC) **L 612**
Slip Flow
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**
Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (76-Lub-24) **L 453**; (D) (AC) **L 462**
Slip Regions
Tangential Loading of Two Bodies in Contact (BN) **AM 513**
Slip-Line Fields
A Numerical Method for Computing Plane Plastic Slip-Line Fields (76-APM-17) **AM 97**
Slot Geometry
Film Cooling With Injection Through Slots (TB) **P 556**

Slot Injection
Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**
Slot Jets
Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**
Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**
Slot, T. Finite Element Analysis of Perforated Plates Containing Triangular Penetration Patterns of 5 and 10 Percent Ligament Efficiency (D) **PVT 88**; (AC) **PVT 90**
Slug Flow
Vertically Downward Two-Phase Slug Flow **F 715**
Sluice Gate
Potential Sluice Gate Flow With Generalized Boundaries (BN) **AM 368**
Smith, A. M. O. *(author)* Analysis of Turbulent Boundary Layers (BR) **AM 189**
Smith, C. C. On Using the ISO Standard To Evaluate the Ride Quality of Broad-Band Vibration Spectra in Transportation Vehicles (TB) **DS 440**
Smith, C. R. Flow Regimes in Two-Dimensional Ribbed Diffusers (D) **F 126**; (AC) **F 127**
Smith, C. V., Jr. Dynamic Stability of Timoshenko Beams by Finite Element Method (D) **I 1149**; (AC) **I 1150**
Smith, E. The Modeling of Flow Concentration in Two-Phase Materials (75-Mat-7) **MT 180**
Smith, E. M. Creep Testing at Variable Temperature and Load. Experimental and Computational Methods (75-WA/Mat-2) **MT 229**
Smith, H. J. Symmetrical Laminar Channel Flow With Wall Suction (D) **F 474**; (AC) **F 475**
Smith, L. H., Jr. Loss Sources and Magnitudes in Axial-Flow Compressors (75-WA/GT-6) **P 411**
Smith, R. A. An Analysis of Critical Heat Flux in Flow Reversal Transients (76-HT-TT) **HT 153**
Smith, R. L. Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) **L 607**; (D) (AC) **L 612**
Smith, R. N. Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Smith, R. T. Wind-Powered Electric Utility Plants (75-WA/Pet-1) **I 293**
Smith, S. A., Jr. Maximum Moment Capability of Pipe With Various D/T Ratios (75-Pet-12) **I 1107**
Smith, V. L. Coal Firing and Industrial Boiler Design—the Modern Approach (75-IPwr-14) **P 297**
Smith, W. D. Electromechanical Dynamics of a Four-Link Mechanism Operating in a Magnetic Field (76-DET-55) **I 1330**
Smoak, R. A. On the Application of Modern Control to Power Plants (F) **DS 320**
Snap-Action Mechanism
Design Analysis of a Snap-Action Mechanism (76-DE-35) **I 1188**
Snap-Through Loads
Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**
Snapping Linkages
On Bidirectionally Snapping Linkages (TB) **I 1363**
Sneck, H. J. Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **L 214**; (D) (AC) **L 222**
Snediker, D. K. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (75-Lub-14) **L 244**; (D) (AC) **L 249**
Snidle, R. W. Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**; A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (75-Lub-33) **L 335**; (D) **L 342**; (AC) **L 343**
So, R. M. C. An Approximate Method for Curved Shear Layers (TB) **F 328**; Entry Flow in Curved Channels (76-FE-G) **F 305**; Shear Effects in Hot-Wire Measurements (TB) **F 771**; Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (D) **F 780, 782**; (AC) **F 782**
Societal Impacts
Comprehension of Societal Impacts Via Technology Assessment (76-Aut-AA) **DS 56**
Sodhi, D. S. Inextensional Deformation of Thin Developable Shells With Edge Constraints (76-APM-4) **AM 69**
Sodium
The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**
Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**
Sodium Coolants
Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**
Soeda, T. On the Indentification of Noise Covariances in Continuous Linear Systems (76-Aut-LL) **DS 296**; The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**
Soedel, W. A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**
Soft Dies
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**
Softening
A Generalization of Plastic Flow Theory With Application to Cyclic Hardening and Softening Phenomena (75-WA/Mat-3) **MT 221**
Soil Mechanics
On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**
Soil Stability
Passive Refrigeration for Arctic Pile Supports (75-Pet-26) **I 695**
Soil Thermal Conductivity
Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**
Soils
Application of Spencer's Ideal Soil Model to Granular Materials Flow (76-APM-5) **AM 49**
Solan, A. Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**; Velocity Distribution in Semiopen Channels (TB) **F 764**
Solar Energy
Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**
A Theory of Concentration of Solar Energy on a Central Receiver for Electric Power Generation (Er) **P 539**
A Theory of Concentrators of Solar Energy on a Central Receiver for Electric Power Generation (75-WA/Sol-1) **P 375**; (D) (AC) **P 384**
Solar Energy Collection
Natural Convection in Enclosed Spaces—A Review of Application to Solar Energy Collection (74-WA/HT-12) **HT 182**
Soler, A. I. Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) **I 1157**
Solid Body Rotation
Decaying Annular Swirl Flow With Inlet Solid Body Rotation (75-FE-14) **F 33**
Solid Boundaries
The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**
Solid Cylinders
Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**
Solid Fuels
An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**
Solid Mechanics
Constitutive Relations for the Nonelastic Deformation of Metals (76-Mat-DD) **MT 193**
Solid Particle Demixing
Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**
Solid Particles
Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**
Solid Surfaces
Films on Solid Surfaces (BR) **L 479**
Inception of Cavitation From a Solid Surface (75-WA/DE-13) **I 145**
An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**
Solid Waste
Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 389**
Solid Wires
Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**
Solids
Creep, Viscoelasticity and Creep Fracture in Solids (BR) **MT 191**
Elements of the Mechanical Behavior of Solids (BR) **AM 383**
Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**
Point Force Solution for an Infinite Transversely Isotropic Solid (76-WA/APM-18) **AM 608**
Transient Melting of a Solid Heated by a Condensing Saturated Vapor—Case 1: Negligible Interface Curvature (Er) **HT 143**
Solids Vibration
Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**
Sonic Boom
"Aeroacoustics: Jet and Combustion Noise; Duct Acoustics" and "Aeroacoustics: FAN, STOL, and Boundary Layer Noise; Sonic Boom; Aeroacoustics Instrumentation" (BR) **DS 108**
Soni, A. H. Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) **I 1342**
Soong, T.-C. The Dynamics of Discus Throw (76-WA/APM-34) **AM 531**
Soong, T. T. A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters (BN) **AM 184**
Soper, W. G. Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity (TB) **I 381**
Sound Power Levels
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**
Sound Propagation
Basic Flow Analyses Used in the Study of Broad-Band Noise in Compressors (75-GT-38) **P 23**
Space Framework
Elastoplastic Analysis of Space Framework: Initial Force Schemes (D) (AC) **PVT 87**
Spalding, G. R. Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**
Spalling Fatigue
Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**
Spanwise Rotation
An Approximate Method for Curved Shear Layers (TB) **F 328**
Spark Advance
Closed Loop Control of Spark Advance Using a Cylinder Pressure Sensor **DS 414**
Sparrow, E. M. Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**; Convective Instability in a Melt Layer Heated From Below (76-HT-BB) **HT 88**; Effect of Density Change on Multidimensional Conduction Phase Change **HT 550**; Effect of Rotation and Coolant Throughflow on the Heat Transfer and Temperature Field in an Enclosure (76-HT-DDD) **HT 387**; Experiments on a Three-Row Fin and Tube Heat Exchanger (TN) **HT 520**; Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**; Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer (TN) **HT 674**; Influence of Pressure on Film Boiling Heat Transfer (76-HT-GG) **HT 166**; Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**; Potential Flow Solution for Crossflow Impingement of a Slot Jet on a Circular Cylinder (76-FE-F) **F 249**
Spatial Cam Mechanisms
Curvature Analysis of Surfaces in Higher Pair Contact—Part 2: Application to Spatial Cam Mechanisms (75-DE-R) **I 403**
Spatial Coordinates
Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**
Spatial Mechanisms
Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**
A Derivation of a Minimal Set of Multilinear Loop Equations for Spatial Mechanisms (76-DET-41) **I 1301**
An Experimental Investigation of the Dynamic Behavior

of the Spatial RSSR Crank and Rocker Mechanism With an Asymmetrical Coupler (75-WA/DE-22) **I 1231**

Spatial Orientation
Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**

Speaker-Driver Units
The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**

Specific Heat Ratio
Effect of Specific Heat Ratio, Impeller Tip Running Clearance, and Compressor Insulation on High-Pressure-Ratio Centrifugal Compressor Modeling (D) (AC) **F 134**

Spectral Absorption
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Spectral Distribution
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (AC) **F 363**

Spectral Representation
Spectral Representation of Wave Propagation in Thermoviscoelastic Medium I (BN) **AM 177**

Spheres
An Analysis of Laminar Forced Convection Between Concentric Spheres **HT 601**
On the Axial Symmetric Contact Problem Involving Elastic Hollow Spheres (Er) **L 56**
Axisymmetric Potential Flow Over Two Spheres in Contact (D) **AM 373**; (AC) **AM 374**
On the Creep Rupture of a Tube and a Sphere (D) (AC) **AM 376**
Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**
Irrotational Flow About Two Touching Spheres (BN) **AM 365**
The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**
Low Knudsen Number Creeping Motion of Two Touching Spheres (76-WA/APM-28) **AM 575**
Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**
Natural Convection of a Heat-Generating Fluid Within Closed Vertical Cylinders and Spheres (75-HT-60) **HT 55**

Spherical Cavities
Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**
An Investigation of the Steady Creep of a Spherical Cavity in a Half Space (76-APM-26) **AM 254**
On the Problem of a Spherical Cavity in an Infinite Elasto-Plastic Medium (76-APM-SS) **AM 633**

Spherical Cycloidal Mechanisms
Synthesis of a Spherical Cycloidal Mechanism (76-DET-30) **I 1342**

Spherical Gas Bearings
Performance of Hydrostatic Spherical Gas Gyro Bearings (75-Lub-39) **L 111**

Spherical Indentation Process
Phenomenological Analysis of Plastic Spherical Indentation (76-Mat-V) **MT 272**

Spherical Oscillations
The Force Acting on a Particle and a Bubble in a Spherically Oscillating Inviscid Liquid (76-FE-R) **F 483**; (D) **F 486**; (AC) **F 487**

Spherical Mechanisms
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) **I 1260**

Spherical Pressure Hulls
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) **I 537**

Spherical Shell Sector Windows
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Spherical Shells
Creep Buckling of a Complete Spherical Shell (76-WA/APM-8) **AM 450**

Spherical-Cap Diaphragms
The Rupture Strength of Fully Annealed, Metallic Spherical-Cap Diaphragms (75-WA/DE-7) **I 141**

Spherically Hollow Balls
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**

Spherical Surfaces
Elastohydrodynamic Lubrication of Spherical Surfaces of Low Elastic Modulus (76-LubS-14) **L 524**

Spheroids
Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**

Spiegelberg, W. D. Application of CAD/CAM in Forging Turbine and Compressor Blades (D) **P 296**

Spielman, L. A. Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**

Spin Rate
Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity (TB) **I 381**

Spin Surface
Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**

Spindle-Bobbin Systems
Spinning Frame Noise Sources (75-Tex-7) **I 840**

Spinning Discus
The Dynamics of Discus Throw (76-WA/APM-34) **AM 531**

Spinning Elastic Disks
The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) **AM 485**

Spinning Frame Noise
Spinning Frame Noise Sources (75-Tex-7) **I 840**

Spinning Top Analysis
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**

Spiral Wound Gaskets
Application of Spiral Wound Gaskets for Leak-Tight Joints (D) **PVT 81**; (AC) **PVT 82**

Split Guideways
Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Sponseller, D. L. The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) **I 708**

Spool Valves
Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves (TB) **DS 316**

Spray Cooling
Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Spray Distribution
The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**

Spray Mixing
Orifice Cavitation and Its Effect on Spray Mixing **F 681**

Spring, D. J. Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**

Sproule, R. S. Performance of Hydraulic Gas Compressors (D) **F 652**; (AC) **F 653**; Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (D) (AC) **F 680**

Spur Gears
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**
Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) **I 635**; (D) **I 641**; (AC) **I 643**
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**

Squeeze Film Bearings
Effect of Pressurization on the Vibration Isolation Capability of Squeeze Film Bearings (75-DET-70) **I 109**; (Er) **I 736**
Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) **L 206**; (D) (AC) **L 213**

Squeeze Films
Application of Finite Element Methods to Lubrication: Squeeze Films Between Porous Surfaces (75-Lub-35) **L 175**; (D) **L 179**; (AC) **L 180**
Cyclic Squeeze Films in Micropolar Fluid Lubricated Journal Bearings (76-Lub-E) **L 412**
Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**
Fluid Inertia Effects in Non-Newtonian Squeeze Films (76-Lub-J) **L 409**
Squeeze Film Theory for Micropolar Fluids (75-LubS-5) **L 139**; (D) **L 144**

Squeezing
The Squeezing of a Fluid Between Two Plates (76-WA/APM-14) **AM 579**

Sridhar, B. N. Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) **I 1183**

Sridhar, K. Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Fics-9) **F 476**

Stability
Application of Optimal Input Synthesis to Aircraft Parameter Identification (76-Aut-U) **DS 139**
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
The Effect of Boundaries on the Stability of Inviscid Stratified Shear Flows (76-APM-S) **AM 243**
Stability Analysis and Optimization of By-Pass Controlled Heat Exchanger With Boiling (76-Aut-Q) **DS 161**
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**
On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**; (Er) **DS 394**
The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) **AM 485**
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**
The Stabilizing Capacity of Bearings for Flexible Rotors With Hysteresis (75-DET-55) **I 87**

Stability Analysis
Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**

Stability Characteristics
Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Stable Laminar Secondary Flow
An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**

Stachiw, J. D. Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**; NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) **I 537**; Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Staiano, M. A. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (D) **P 499**; (AC) **P 500**

Stainless Steel Filler Metals
Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**

Stainless Steels
Creep-Fatigue Crack Propagation in Austenitic Stainless Steel (75-WA/PVP-1) **PVT 166**
The Effect of Carburization in Sodium on the Mechanical Properties of Austenitic Stainless Steels (75-Mat-Q) **MT 9**
Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**
Heat-to-Heat Variation in Creep Properties of Types 304 and 316 Stainless Steels (D) **PVT 85**; (AC) **PVT 86**
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Laws for Work-Hardening and Low-Temperature Creep **MT 76**
Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**
Tensile Properties of Thermally Exposed Type 304 Stainless Steel (76-Mat-W) **MT 357**

Standard Forged Gears
A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**

Standardizing Machines
Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**
Stanton, G. B., Jr. The Future of Safety and Health: A Challenge to Engineering Managers (75-WA/Mgt-7) **I 761**
Staple Yarns
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**
Starken, H. Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (D) **P 256**; (AC) **P 257**
Start-Up Problems
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**
State Space Methods
Analysis of a DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**
State Variables
Sensible State Variables **DS 353**
Static Characteristics
Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) **F 476**
Static Loads
Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads **PVT 126**; (Er) **PVT 198**
Static Optimization
On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**
Stationary Disks
Nonaxisymmetric Flow in the Narrow Gap Between a Rotating and a Stationary Disk (75-WA/FE-14) **F 217**; (D) (AC) **F 223**
Stationary Targets
Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**
Statistical Analysis
Statistical Analysis of Longevity of Prosthetic Aortic Valves (74-WA/Bio-7) **AM 2**
Statistical Burst Strength
The Effect of Casing Wear on the Burst Strength of Casing—Part 2: Statistical Burst Strength of Worn and Unworn Casing Strings (75-Pet-27) **I 686**
Statistical Fluid Mechanics
Statistical Fluid Mechanics, Vol. II (BR) **AM 521**
Statistical Mechanics
Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) **AM 409**
Statistical Methods
Statistical Weather Forecasting (76-Aut-A) **DS 49**
Statistical Modeling
Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**
Statistical Models
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**
Steady-State Conduction
The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**
Steady-State Creep
Crack Initiation In Grain Boundaries Under Conditions of Steady-State and Cyclic Creep (75-Mat-17) **MT 132**
Steam Boilers
High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**
Steam Ejectors
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**
Steam Flow
Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading (TB) **F 573**
Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) **F 199**; (D) **F 206**; (AC) **F 207**
Steam Generators
A Nonlinear Dynamic Model of a Once-Through Subcritical Steam Generator (76-Aut-M) **DS 332**
The Physical and Chemical Characteristics of Pyrites and Their Influence on Fireside Problems in Steam Generators (75-WA/CD-2) **P 517**
Steam Tables
Steam and Air Tables in SI Units (BR) **DS 108**
Steam Tracers
Pipe Heating With Steam Tracers (76-HT-ZZ) **HT 509**
Steam Turbine Control
The Challenge of Reliability in Steam Turbine Control (F) **DS 321**
Steam Turbine-Generators
Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**
Steam Turbines
Methods for Reducing Losses Across Fluid Metering Nozzles (75-WA/FM-7) **F 614**
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
Steel Pins
Instabilities Arising From the Frictional Interaction of a Pin-Disk System Resulting in Noise Generation (75-DET-25) **I 81**
Steel Plates
Further Observations on A533-B Steel Plate Tailored for Improved Radiation Embrittlement Resistance **PVT 111**
Steel Raceways
The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**
Steel Specimens
Cumulative Fatigue Damage on Large Steel Specimens Under Axial Programmed Loading With Nonzero Stress (76-Mat-M) **MT 249**
Steele, C. R. *(reviewer)* Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**
Steels
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**
Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**
A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**
The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) **I 708**
Estimation of Fatigue Limit of Steel Subjected to Bending Loads (TB) **MT 381**
High Strain Rate Tensile Properties of Annealed 2 ¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**
Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**
Improved 2¼ Cr-1 Mo Pressure Vessel Steel Through Electroslag Remelting (76-Pet-1) **PVT 298**
Influence of Sulfur Content on the Fracture Toughness Properties of 2¼ Percent Cr-1 Percent Mo Steel **PVT 135**
The Initiation and Propagation of Ductile Fracture in Low Strength Steels (75-Mat-10) **MT 37**
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**
Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**
A Mathematical Description for the Stress-Strain Behavior of Annealed 2¼ Cr-1 Mo Steel **PVT 118**
On the Mechanism of Lubricant Film Failure in Sliding Concentrated Steel Contacts (76-LubS-13) **L 575**; (D) (AC) **L 579**
Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**
Probabilistic Assessment of Low-Cycle Fatigue Behavior of Structural Welds (75-PVP-29) **PVT 26**
The Relation Between Ultimate Tensile Strength and Carbide Size in Steel (75-Mat-18) **MT 173**
Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**
Selection of Operating Parameters in Surface Grinding of Steels (75-Prod-G) **I 56**
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**
Steichen, J. M. Mechanical Properties of Roll Extruded Nuclear Reactor Piping (75-PVP-41) **PVT 105**; Tensile Properties of Thermally Exposed Type 304 Stainless Steel (76-Mat-W) **MT 357**
Steiner, A. Pipe Heating With Steam Tracers (76-HT-ZZ) **HT 509**
Step Bearings
Pressure Drop Due to Inertia Forces in Step Bearings (75-Lub-34) **L 167**
Stepped Pistons
An Optimum Stepped Piston for Cylinders Working With Compressible Fluid (76-FE-J) **F 494**
Stewart, M. B. Small Bubble Motion in an Accelerating Liquid (76-WA/APM-5) **AM 399**
Stewart, N. D. Spinning Frame Noise Sources (75-Tex-7) **I 840**
Stewart, P. A. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**
Stewart, R. M. Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**
Stick-Slip
An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**
Stiff-Cored Beams
Static Response of Stiff-Cored Unsymmetric Sandwich Beams (75-DE-G) **I 391**
Stiffler, A. K. Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) **F 443**
Stiffness
Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**
On the Stiffness and Damping Properties of Gas Bearings (TB) **L 189**
Stochastic Automata
Simulation of Market Price Formation as a Game Between Stochastic Automata (76-Aut-Z) **DS 91**
Stochastic Effects
Deterministic and Stochastic Effects in Population Dynamics (76-Aut-F) **DS 44**
Stochastic Modeling
A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**
Stochastic Process Modeling
An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**
Stone, C. C. Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**
Stone, D. H. A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) **I 446**; (D) (AC) **I 452**
Story, J. M. The Effect of Receiver Pressure on the Observed Flow Pattern in the Hydrostatic Extrusion of Bimetal Rods (75-WA/Prod-15) **I 909**
Strahle, W. C. Combustion Generated Noise in Gas Turbine Combustors (75-GT-27) **P 242**
Straight Bars
Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**
Straight Fins
Transient Response of Straight Fins: Part II (TN) **HT 324**
Straight-Line Motion
Approximate Straight-Line Motion From Simple Spatial Mechanisms (76-DET-7) **I 1250**
Strain Concentration
Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**
Strain Energy
Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy (TB) **I 1370**
Strain Energy Concentration
A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**

Strain Formulas
Formulas for Stress and Strain (BR) **AM 522**
Strain Hardening
Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) **MT 264**
Strain Range Partitioning
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) **MT 244**
Strain Rate Effects
Strain-Rate Effect in the Endochronic Theory of Viscoplasticity (76-APM-G) **AM 92**
Strain Rates
High Strain Rate Tensile Properties of Annealed 2 ¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**
Strain-Rate Formulations
An Inelastic Constitutive Model for Monotonic, Cyclic, and Creep Deformation: Part I—Equations Development and Analytical Procedures (75-Mat-14) **MT 97**; (D) (AC) **MT 112**; Part II—Application to Type 304 Stainless Steel (75-Mat-15) **MT 106**; (D) (AC) **MT 112**
Stratified Charge Engine
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**
Stratified Fluids
Natural Convection From a Vertical Surface to a Thermally Stratified Fluid (75-WA/HT-62) **HT 446**
Observations of Wave Motion and Upstream Influence in a Stratified Fluid (76-APM-Q) **AM 222**
Streakline Flow
Streakline Flow Visualization of Discrete Hole Film Cooling for Gas Turbine Applications (75-WA/HT-12) **HT 245**
Stream Pollution
A Random Differential Equation Arising in Stream Pollution (76-Aut-G) **DS 32**
Streaming Motion
Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**
Stress Analysis
Interpretation of Irradiation Effects on the Fracture Toughness of a Pressure Vessel Steel in Terms of Crack Tip Stress Analysis (75-Mat-9) **MT 30**; (D) **MT 35**; (AC) **MT 36**
Stress Concentration
Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**
Stress Concentration Factors From Overlapping Stress Fields in Uniaxial Tension (74-WA/DE-3) **I 332**
Stress Distributions
Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**
Stress Fields
Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) **MT 146**
Stress Focusing
Stress-Focusing Effect in a Uniformly Heated Cylindrical Rod (76-APM-Z) **AM 464**
Stress Formulas
Formulas for Stress and Strain (BR) **AM 522**
Stress Gradients
Measured *uw* Stress Gradients in a Three-Dimensional Turbulent Boundary Layer (TB) **F 768**
Stress Intensity
Corner Crack at the Bore of a Rotating Disk (75-WA/GT-18) **P 465**; (D) **P 470, 471**; (AC) **P 472**
Stress-Intensity Factors for an Insulated Half-Plane Crack (76-APM-D) **AM 107**
Stress-Intensity Factors for Very Short Cracks in Arbitrary Pressurized Shells (76-WA/APM-29) **AM 657**
Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**
Stress Models
A Reynolds Stress Model for Turbulent Corner Flows—Part I: Development of the Model (76-FE-C) **F 261**; Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**
Stress Pulses
Energy Transmission in the Passage of Extensional Stress Pulses From a Straight Bar Into a Helix of Small Pitch (BN) **AM 506**
Transmission and Reflection of Extensional Stress Pulses at the Junction of a Straight Bar and a Helix (76-APM-18) **AM 309**
Stress-Redistribution Times
The Influence of Constitutive Relationships on Stress-Redistribution Times in Creeping Structures (BN) **AM 173**
Stress Relaxation
Stress Relaxation in Press-Fitted Joints (75-WA/DE-4) **I 137**
Stress Singularities
Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**
Stress States
Failure Analysis of Cast Irons Under General Three-Dimensional Stress States (75-Mat-16) **MT 69**
An Improved Fracture Criterion for Three-Dimensional Stress States (75-Mat-11) **MT 159**
Stress Tensor Components
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (AC) **F 363**
Stresses
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-18) **AM 117**
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) **I 890**
Approximations of the Buckling Stresses of Cylinders to Uniform External Normal Pressure (BN) **AM 517**
Bending Stresses in Spherically Hollow Ball Bearing and Fatigue Experiments (75-Lub-8) **L 472**; (D) (AC) **L 475**
Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) **I 206**
Calculation of Acoustical Resonances in Irregular Cavities With Application to Noise-Induced Stress in Expansion Joints (75-DET-64) **I 101**
Combined Axial Stress Fatigue Reliability for AISI 4130 and 4340 Steels (75-WA/DE-17) **I 153**
On the Determination of Stresses and Deflections for Anisotropic Homogeneous Cantilever Beams (76-APM-L) **AM 75**
The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
Distribution of Shearing Stresses in an Orthotropic Cantilever (Er) **AM 524**
Dynamics of Initially Stressed Plates (76-APM-29) **AM 304**
Effect of Nonuniform Residual Bending Stresses on Post-leveled Sheet Flatness (75-WA/Prod-2) **I 196**
Effect of Sliding Friction on Contact Stresses in a Rectangle Compressed by Rigid Planes (D) **AM 375**; (AC) **AM 376**
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**
Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Unform Pressure (75-DET-23) **I 1014**
A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) **L 547**; (D) (AC) **L 552**
A Parametric Approach to Cyclic Creep (76-APM-E) **AM 28**
Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**
Stresses at the Surface of a Flat Three-Dimensional Ellipsoidal Cavity (75-Mat-12) **MT 164**
Stresses Due to Interference Fits in Cylinders With Concentric and Eccentric Holes (BN) **AM 695**
Stresses in Ventricular Wall (76-APM-31) **AM 194**
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**
Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**
Stress-Optic Law
Shear Difference Method and Application in Orthotropic Photoelasticity (76-Mat-C) **MT 369**
Stress-Strain Behavior
A Mathematical Description for the Stress-Strain Behavior of Annealed 2¼ Cr-1 Mo Steel **PVT 118**
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**
Stress-Strain Laws
An Exponential Stress-Strain Law for Cyclic Plasticity (76-Mat-AA) **MT 322**
Strevel, D. G. The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**
Stricklin, J. A. A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**
Striker Surface Wear
Abrasive Impact Wear of Type (75-Lub-28) **L 330**; (D) (AC) **L 334**
String Deflection
Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**
Strip Electrodes
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**
Strip Rolling
A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) **L 426**; (D) **L 431, 432**; (AC) **L 432**
Strip Velocity
Attenuation of Concentrated Loads in a Thin Moving Elastic Strip (76-APM-Y) **AM 475**
Strips
Note on the Solution of a Semi-Infinite Strip Subjected to a Concentrated Load (BN) **AM 188**
Structural Concrete
High-Alumina Cement Concrete (BR) **MT 191**
Structural Dynamics
Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**
Structural Elements
On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**
Bending of a Curved Bar of Micropolar Elastic Material (BN) **AM 502**
Structural Failures
The Application of Greenhill's Formula to Cable Hockling (76-WA/APM-31) **AM 681**
Structural Materials
Analysis of Fatigue-Crack Growth in High-Strength Steel—Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**
Structural Mechanics
Nonlinear Dynamic Buckling of Sandwich Panels (76-APM-EE) **AM 459**
Structural Systems
Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**
Identification of Structures Through Records Obtained During Strong Earthquake Ground Motion (75-DET-77) **I 1347**
A Simplified Technique for Prediction of Collapse Modes in Crash-Impacted Structural Systems (75-DET-13) **I 902**
Structural Welds
Probabilistic Assessment of Low-Cycle Fatigue Behavior of Structural Welds (75-PVP-29) **PVT 26**
Structure Collapse
Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**
Structure-Liquid System
Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**
Structures
Composite Materials and Their Use in Structures (BR) **MT 96**
An Introduction to the Elastic Stability of Structures (BR) **AM 383**
Struts
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**
Struziak, R. M. Direct Measurement of the Mean Flow Velocity Vector **F 736**
Sub-Channels
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Sub-Channel of a Bare Rod Bundle (Er) **HT 508**
Subcooled Decompression
Subcooled Decompression Analysis in PWR LOCA (76-HT-M) **HT 12**
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a

Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **I 1200**

Submarine Detection
Dynamics of a Drifting Buoy-Cable-Array Assembly Used in Submarine Detection (75-DET-27) **I 935**

Submarine Hoses
A Simple Model of Submarine Hoses in Single Point Moorings (BN) **AM 170**

Submersibles
Acrylic Plastic Spherical Shell Windows Under Point Impact Loading (75-WA/OcE-6) **I 563**
NEMO Type Acrylic Plastic Spherical Hull for Manned Operation to 3000 ft Depth (75-WA/OcE-3) **I 537**
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Subramanian, T. L. An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**

Subramanyan, S. A Cumulative Damage Rule Based on the Knee Point of the S-N Curve (76-Mat-E) **MT 316**. Estimation of Fatigue Limit of Steel Subjected to Bending Loads (TB) **MT 381**

Subsonic Cross Flow
Laser-Doppler Measurements in a Subsonic Jet Injected into a Subsonic Cross Flow (D) (AC) **F 777**

Subsonic Diffusers
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (D) (AC) **F 776**; (TB) **F 320**

Subsonic Jets
Laser-Doppler Measurements in a Subsonic Jet Injected Into a Subsonic Cross Flow (76-FE-L) **F 516**

Subsonic Stream
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**

Subsonic Transport Aircraft
Some Future Trends in Aero Engine Design for Subsonic Transport Aircraft (75-GT-2) **P 281**

Substructures
Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**

Subterrene Penetrators
Thermal Analysis of Some Subterrene Penetrators (75-WA/HT-69) **HT 485**

Subway Trains
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**; Part 2: Overall System Model (76-RT-2) **I 744**; Part 3: System Evaluation (76-RT-3) **I 751**; Part 4: Overall System Performance (76-RT-4) **I 756**

Sucec, J. Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (76-FE-8) **F 667**; (D) (AC) **F 673**

Suction
Condensation on a Rotating Disk With Constant Axial Suction (TN) **HT 682**

Sudhakar, D. P. Optimal Control in the Presence of Nondifferentiable State Constraints **DS 432**

Suh, N. P. *(author)* Elements of the Mechanical Behavior of Solids (BR) **AM 383**; Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**

Suh, S. K. Metal Flow and Fracture in an Extrusion-Forging Process (76-Mat-Q) **MT 330**

Sulfide Stress Cracking
The Effects of Processing Variables on Mechanical Properties and Sulfide Stress Cracking Resistance of SAE 4135 Steel Modified With 0.75 Percent Mo and 0.035 Percent Cb (75-Pet-39) **I 708**
Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**

Sulfur
Influence of Sulfur Content on the Fracture Toughness Properties of 2¼ Percent Cr-1 Percent Mo Steel **PVT 135**

Sullivan, A. M. Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part I: Stress Level and Stress Ratio Effects at Constant Amplitude (75-WA/PVP-22) **PVT 179**; Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**

Sullivan, W. G. Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**

Sun, K. H. Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**

Suo, M. The Additive Nature of Film Cooling From Rows of Holes (75-WA/GT-17) **P 457**; (D) (AC) **P 464**

Suokas, L. A. Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) **I 737**; Part 2: Overall System Model (76-RT-2) **I 744**; Part 3: System Evaluation (76-RT-3) **I 751**; Part 4: Overall System Performance (76-RT-4) **I 756**

Superalloys
Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Super Laminar Flow
Super Laminar Flow in Bearings—A Review of the Second Leeds-Lyon Symposium, Lyons, France, September 17–19, 1975 (FR) **L 5**

Superheat
Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Supersaturation Model
Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**

Supersonic Cascades
Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**

Supersonic Compressor Cascades
Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (75-GT-33) **P 247**; (D) **P 255, 256**; (AC) **P 257**

Supersonic Flow
Spatial Supersonic Flow Through Annular Cascades (75-GT-113) **P 274**

Supersonic Flow Regime
Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**

Supersonic Nozzles
Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**

Supersonic Stream
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**

Support Flexure
Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Support Stiffness
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**

Surface Curvature
Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**
Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**; (D) **F 780, 782**; (AC) **F 782**

Surface Distribution
A Study on Multielement Cascades and Airfoils (75-WA/FE-3) **F 208**; (D) (AC) **F 215**

Surface Fatigue Life
Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**

Surface Flaws
Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Surface Generation
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) **I 1192**; (D) **I 1199**; (AC) **I 1200**; Part 2: Cutting With a Tool With Flank Wear (75-WA/Prod-10) **I 1202**

Surface Grinding
An Evaluation of Grinding Performance for Single and Polycrystal Grit Aluminum-Oxide Grinding Wheels (75-WA/Prod-1) **I 189**
Parameter Optimization of the Steel Grinding Process (75-DET-98) **I 1048**
Selection of Operating Parameters in Surface Grinding of Steels (75-Prod-G) **I 56**

Surface Integral Methods
Surface Integral Method Applied to the Problems of an Elastic Strip With Periodically Spaced Holes (76-APM-NN) **AM 599**

Surface Integrity
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) **I 999**; (D) **I 1006, 1007**; (AC) **I 1007**

Surface Jets
Analysis of Buoyant Surface Jets (76-HT-FFF) **HT 367**

Surface Methodology
Use of Response Surface Methodology to Select a Cutting Tool to Maximize Profit (75-Prod-H) **I 63**

Surface Recession
Correlation of Theoretical Analysis With Experimental Data on The Performance of Charring Ablators (76-HT-P) **HT 139**

Surface Rewetting
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**

Surface Roughness
Analytical Model for Guideway Surface Roughness **DS 425**
Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (76-FE-4) **F 626**; (D) **F 632, 633**; (AC) **F 634**
The Effect of Surface Roughness on the Average Film Thickness Between Lubricated Rollers (76-Lub-B) **L 117**
Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**
Surface Roughness Effects on Fatigue in Partial EHD Lubrication (76-LubS-2) **L 530**; (D) **L 536**; (AC) **L 537**

Surface Structures
Grinding of Glass: The Mechanics of the Process (75-Prod-1) **I 459**; Surface Structure and Fracture Strength (75-Prod-2) **I 468**

Surface Velocity Distributions
A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (25-GT-34) **P 229**; (D) **P 238, 239**; (AC) **P 239**

Surface-Fluid-Shell System
Dynamically Coupled Motion of Surface-Fluid-Shell System (BN) **AM 507**

Surficial Layers
On the Calculation of Seizure Considering the Plastic Flow of the Surficial Layers (76-Lub-C) **L 133**

Surge
Surge and Rotating Stall in Axial Flow Compressors—Part I: Theoretical Compression System Model (75-GT-9) **P 190**; (D) **P 212, 213**; (AC) **P 216**; Part II: Experimental Results and Comparison With Theory (75-GT-10) **P 199**; (D) **P 212–215**; (AC) **P 216**

Suryanarayana, N. V. Transient Response of Straight Fins: Part II (TN) **HT 324**

Suspension Flow
Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**

Suspension Systems
The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**
Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**
"Optimum Linear Preview Control With Application to Vehicle Suspension"—Revisited (76-Aut-PP) **DS 309**

Sutherland, G. H. Analytical and Experimental Investigation of a High-Speed Elastic-Membered Linkage (75-WA/DE-21) **I 788**

Suzuki, A. An Experimental Investigation of Cylindrical Roller Bearings Having Annular Rollers (76-LubS-1) **L 538**; (D) **L 543, 544**; (AC) **L 546**

Swamy, N. V. C. Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**

Sweep
Effect of Sweep and Drag on Hydrofoil Stability (75-DET-67) **I 965**

Sweet, A. L. Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**

Swift, R. A. Improved 2¼ Cr-1 Mo Pressure Vessel Steel Through Electroslag Remelting (76-Pet-1) **PVT 298**

Swirl
Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**

Swirling Flow
Theboundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**
Decaying Annular Swirl Flow With Inlet Solid Body Rotation (75-FE-14) **F 33**

Swirling Motion
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
Syamala Rao, B. C. Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**
Symmetric Rotors
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) **I 576**
Symmetric Vortices
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**
Synchronous Response
Effects of Flexible Mounting and Damping on the Synchronous Response of a Rotor-Shaft System (76-APM-B) **AM 144**
System Dynamics
Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**
System Evaluations
Regenerative Drive for Subway Trains—Part 3: System Evaluation (76-RT-3) **I 751**
System Identification
Distributed System Identification: A Green's Function Approach (76-Aut-H) **DS 146**
Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**
Systems Methodology
Large-Scale Systems Methodology and Urban Revitalization (F) **DS 357**
System Models
Regenerative Drive for Subway Trains—Part 2: Overall System Model (76-RT-2) **I 744**
System Performance
Regenerative Drive for Subway Trains—Parl 4: Overall System Performance (76-RT-4) **I 756**
System Rotation
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
System Simulation
System Simulation by Computers (F) **DS 237**
System Stability
System Stability by Improved Routh and Jury Arrays **DS 205**
Systematic Synthesis
Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) **I 124**
Szakovits, R. J. Metal Cutting Dynamics With Reference to Primary Chatter (75-WA/Prod-31) **I 258**
Szego, J. Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) **HT 471**
Sze, Y. The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**
Szeri, A. Z. Flow Development in a Parallel Plate Channel (75-LubS-4) **L 145**; (D) **L 154, 155**; (AC) **L 156**

T

Tabakoff, W. Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**; Losses in Radial Inflow Turbines (76-FE-9) **F 364**; (D) **F 371, 372**; (AC) **F 372**
Tactile-Controlled Robots
Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**
Tailpipes
Flow Control in Wide-Angled Conical Diffusers **F 728**
Takahara, K. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**
Takahashi, Y. The Second Generation Reports (Ed) **DS 213**
Takeuchi, D. I. The Energy Stability Limit for Flow in a Curved Channel (76-APM-TT) **AM 548**
Takeuchi, M. Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**
Takeuti, Y. Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**
Takeyasu, K. Precision Insertion Control Robot and Its Application (76-DET-50) **I 1313**
Takimoto, A. Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**
Tallian, T. E. Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part I—Mathematical Model (75-Lub-37) **L 251**; Part II—Experimental (76-Lub-38) **L 384**; (D) (AC) **L 392**; Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (D) **L 71**; (AC) **L 72**; Surface Roughness Effects on Fatigue in Partial EHD Lubrication (D) **L 536**; (AC) **L 537**
Tamura, A. Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) **F 163**; (D) (AC) **F 172**
Tamura, K. On Multilevel Optimization of a Combined Static and Dynamic Problem (76-Aut-FF) **DS 260**
Tanaka, T. Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**
Tangential Loading
Tangential Loading of Two Bodies in Contact (BN) **AM 513**
Tani, I. Channel Flow Over a Smooth-to-Rough Surface Discontinuity With Zero Pressure Gradient (D) **F 632**; (AC) **F 634**
Tani, J. Influence of Deformations Prior to Instability on the Dynamic Instability of Conical Shells Under Periodic Axial Load (76-APM-F) **AM 87**
Taper Leaf Springs
Equivalent One-Dimensional System for Analysis of Taper Leaf Springs (75-DE-O) **I 39**
Tapered Beams
Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**
Tapered Roller Bearings
Analysis of Tapered Roller Bearings Considering High Speed and Combined Loading (76-LubS-9) **L 564**; (D) **L 572, 573**; (AC) **L 573**
Tayal, S. P. Theoretical Prediction of Journal Center Motion Trajectory (76-Lub-L) **L 620**
Taylor, T. E. An Examination of the Relationship Between Ash Chemistry and Ash Fusion Temperatures in Various Coal Size and Gravity Fractions Using Polynomial Regression Analysis (75-WA/CD-3) **P 528**
Technical Briefs
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers **F 320**
An Approximate Method for Curved Shear Layers **F 328**
On Belt Wear **I 732**
On Bidirectionally Snapping Linkages **I 1363**
Calculation of Velocity Profiles in Drag-Reducing Flows **F 563**
Combined Free and Forced Laminar Convection in a Bingham Plastic on a Vertical Flat Plate **F 119**
Design Equations for the Short-Time Viscosity Behavior of a Lubricant **L 476**
A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow **F 568**; (D) **F 570, 571**; (AC) **F 572**
The Effect of Random Errors in Blade Setting on the Potential Incompressible Flow in Compressor Cascades **F 759**
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli **F 113**
Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines **DS 196**
Experimental Investigation of Flow-Induced Forces in Pneumatic Spool Valves **DS 316**
Film Cooling With Injection Through Slots **P 556**
Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior **F 773**
Liquid Container Filling and Charging **I 730**
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens **F 762**
Measured $\overline{uw}$ Stress Gradients in a Three-Dimensional Turbulent Boundary Layer **F 768**
Modeling of System Dynamics and Disturbance From Paper-Making Process Data **DS 197**
A Modified Law of the Wake for Turbulent Shear Layers **F 578**
Momentum Integral Solution of Developing Flow in an Annulus With Rotating Inner Cylinder **F 558**
Nonsimilarity Solutions for Cylindrical Blast Waves in Magneto-Gas Dynamics **F 580**
A Note in Comment on "Analysis of Steady Laminar Flow of an Incompressible Newtonian Fluid Through Curved Pipes of Small Curvature **F 323**
A Note on the Peak of Johnston's Triangular Model in Three-Dimensional Turbulent Boundary Layers **F 577**
A Note on Slip in V-Belt Drives **I 1366**
A Note on the Two-Dimensional Cylinder Wake **F 318**
A Note on Vortex Breakdown in a Cylindrical Tube **F 322**
On Numerical Solution of the Three-Dimensional Vorticity Equation **F 770**
Prediction of Cylinder Flow Pressures in Mass-Flow Bins Using Minimum Strain Energy **I 1370**
Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade **P 554**
A Re-Evaluation of Inertia Effects In Hydrodynamic Gas Journal Bearings **L 187**
Rotating Bending Fatigue Tests in a Hydrostatic Environment **MT 380**
Estimation of Fatigue Limit of Steel Subjected to Bending Loads **MT 381**
Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk **F 560**
Shear Effects in Hot-Wire Measurements **F 771**
Similarity in Transient High Speed Gas Flow Through Porous Media **F 567**
A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus **F 766**
Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading **F 573**
Spin-Decoupled Projectiles: Relationship of Spin to Muzzle Velocity **I 381**
On the Stiffness and Damping Properties of Gas Bearings **L 189**
Theoretical Thermoelastic Consideration on Accuracy in Machining Metals **I 1368**
Transfer Functions of Hyperbolic Distributed Parameter Systems **DS 318**
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet **F 116**
Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe **F 562**
Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade **P 533**
On Using the ISO Standard To Evaluate the Ride Quality of Broad-Band Vibration Spectra in Transportation Vehicles **DS 440**
Velocity Distribution in Semiopen Channels **F 764**
Visualization of Secondary Flows in Planar Nozzles **F 326**
Technical Notes
An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders **HT 670**
Approximate Solution for Convective Fins With Variable Thermal Conductivity **HT 680**
Buoyancy Effects on Forced Convection Along a Vertical Cylinder With Uniform Surface Heat Flux **HT 523**
A Closed-Form Solution for the Radiosity at the Edge of a Rectangular Cavity **HT 148**
Combined Free and Forced Convection in Inclined Circular Tubes **HT 32**
Condensation on a Rotating Disk With Constant Axial Suction **HT 682**
A Correction to Noncircular Duct Hot Patch Data **HT 332**
Critical Thickness of Insulation Accounting for Variable Convection Coefficient and Radiation Loss **HT 150**
Determination of Configuration Factors of Irregular Shape **HT 311**
Evaporation and Heating With Turbulent Falling Liquid Films **HT 315**
Experimental Study of Free Convective Heat Transfer From Inclined Cylinders **HT 672**
Experiments on a Three-Row Fin and Tube Heat Exchanger **HT 520**
Finite Element Formulation of the Heat Conduction Equation in General Orthogonal Curvilinear Coordinates **HT 525**
Flow and Heat Transfer Over a Flat Plate With Uniformly Distributed, Vectored Surface Mass Transfer **HT 674**
Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder **HT 144**
Free Convection Heat Transfer From Vertical Needles **HT 522**
Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow **HT 319**
The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer **HT 533**
Locally Nonsimilar Solution for Laminar Free Convection Adjacent to a Vertical Wall **HT 321**
Mean Beam Lengths for Spheres and Cylinders **HT 308**
Melting Heat Transfer in Steady Laminar Flow Over a Flat Plate **HT 531**
Minimization of Measurement Errors Involved in the Probe

Method of Determining Soil Thermal Conductivity **HT 530**
A New Look at the Superposition of Boundary Conditions in the Evaluation of Temperature Distribution in a Finite Rectangular Plate With Adiabatic Faces at Steady State **HT 527**
Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems **HT 336**
Radiation Heat Transfer Through Molecular Gases at Large Optical Depth **HT 310**
A Simple Parameterization for the Water Vapor Emissivity **HT 676**
Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating **HT 678**
A Theoretical Study of Thermally Developing Fully Turbulent Boundary Layer Flow **HT 334**
Thermal Analysis of a Fast-Moving Slab in Two Adjacent Temperature Chambers **HT 326**
Thermal Contact Conductance of Lead Ferrite and Boron Nitride **HT 331**
Transient Response of Straight Fins: Part II **HT 324**
Transient Temperature Rise in Layered Media **HT 329**
Unsteady and Two-Dimensional Flow of a Condensate Film **HT 313**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders **HT 146**

Technological Innovations
Scheduling Delays in Synchronous Transportation Networks **DS 173**

Technology
On the Decline of U. S. Technology (Ed) **F 141**

Technology Assessment
Comprehension of Societal Impacts Via Technology Assessment (76-Aut-AA) **DS 56**

Technology Transfer
Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**

Temperature
The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Temperature Distribution
The Heat Balance Integral in Steady-State Conduction (76-HT-VV) **HT 466**
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**
A New Look at the Superposition of Boundary Conditions in the Evaluation of Temperature Distribution in a Finite Rectangular Plate With Adiabatic Faces at Steady State (TN) **HT 527**
Stress-Focusing Effect in a Uniformly Heated Cylindrical Rod (76-APM-Z) **AM 464**
Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) **HT 221**
Transient Temperature Rise in Layered Media (TN) **HT 329**

Temperature Fields
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

Temperature Measurements
Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**

Temperature Regulation
The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Temperature Sensors
Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**

Temperature Variations
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**

Temperature-Dependent Viscosity
Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**

Tensile Tests
The Application of the Double Ligament Tensile Test in Deformation Processing (75-WA/Prod-27) **I 1237**

Teo, K. L. Optimal Control of a National Economic System With Full Employment (76-Aut-Y) **DS 80**

ten Napel, W. E. Dynamically Loaded Pivoted Pad Journal Bearings: Mobility Method of Solution (75-Lub-25) **L 196**; (D) **L 204**; (AC) **L 205**

Tendorf, Z. A. Dynamics of Initially Stressed Plates (76-APM-29) **AM 304**

Tensile Bars
Utility of Surface-Flawed Tensile Bars in Cyclic Life Studies (76-Mat-N) **MT 305**

Tensile Properties
Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**
High Strain Rate Tensile Prgperties of Annealed 2 ¼ Cr-1 Mo Steel (76-Mat-J) **MT 361**
Tensile Properties of Thermally Exposed Type 304 Stainless Steel (76-Mat-W) **MT 357**

Tensile Stress
Fracture Mechanics and Fractography of Creep and Fatigue Crack Propagation at Elevated Temperature (76-Mat-T) **MT 296**

Tensile Tests
A Mathematical Description for the Stress-Strain Behavior of Annealed 2¼ Cr-1 Mo Steel **PVT 118**
Necessary Conditions for Ductile Flow of a Tensile Composite Rod (75-WA/Prod-11) **I 272**

Tension
Stress Concentration Factors From Overlapping Stress Field in Uniaxial Tension (74-WA/DE-3) **I 332**

Terasaki, F. Hydrogen-Induced Cracking of Steels Under Wet Hydrogen Sulfide Environment (75-Pet-2) **I 1221**

Terry, T. A. *(reviewer)* Measurement Systems, Application and Design, Revised Edition (BR) **DS 204**

Tessarzik, J. M. Experimental Evaluation of Multiplane-Multispeed Rotor Balancing Through Multiple Critical Speeds (75-DT-73) **I 988**; Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**

Test Reading Estimations
Practical Method for Estimating Number of Test Readings Required (75-WA/PTC-1) **P 386**; (D) (AC) **P 392**

Textile Industry
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Spinning Frame Noise Sources (75-Tex-7) **I 840**

Textile Yarns
The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**
The Varying Structure of Open-End Spun (OE) Yarns (75-Tex-1) **I 652**

Thaller, H. J. Spectral Analysis of Complex Systems Supported at Several Elevations **PVT 162**

Thakkar, J. G. Dynamic Testing in Nuclear Power Plants for Model Validation (76-Aut-NN) **DS 340**

Thau, S. A. Multiple Diffractions of Elastic Shear Waves by a Rigid Rectangular Foundation Embedded in an Elastic Half Space (76-APM-37) **AM 295**; Multiple Diffractions of Elastic Waves by a Rigid Rectangular Foundation: Plane-Strain Model (76-APM-X) **AM 291**

Thawing
"Heat-Valve" Effects in the Ground Thermal Regime **HT 537**

Theocaris, P. S. Stress Singularities at Equal Angle Biwedges and Two-Material Composite Half Planes With Rough Interfaces (76-APM-14) **AM 64**

Theofanous, T. G. On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**

Theoretical Analysis
Correlation of Theoretical Analysis With Experimenta Data on The Performance of Charring Ablators (76-HT-P) **HT 139**

Theoretical Models
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

Thermal Analysis
Thermal Analysis of a Fast-Moving Slab in Two Adjacent Temperature Chambers (TN) **HT 326**

Thermal Boundary Conditions
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Thermal Boundary Layers
The Laminar Compressible Boundary Layer on a Rotating Sphere With Heat Transfer (TN) **HT 533**

Thermal Buckling
Thermal Buckling of Orthotropic Plates (BN) **AM 361**

Thermal Choking
Choking and Mixing of Two Compressible Fluid Streams (75-FE-J) **F 311**; (D) (AC) **F 317**

Thermal Conductivity
Approximate Solution for Convective Fins With Variable Thermal Conductivity (TN) **HT 680**
Characteristics of Hollow Glass Microspheres as an Insulating Material and an Opacifier (76-HT-00) **HT 232**
Minimization of Measurement Errors Involved in the Probe Method of Determining Soil Thermal Conductivity (TN) **HT 530**
Perturbation Solution for Convecting Fin With Variable Thermal Conductivity (D) (AC) **HT 685**

Thermal Contact Conductance
Thermal Contact Conductance of Lead Ferrite and Boron Nitride (TN) **HT 331**

Thermal Convection
Onset of Convection in a Porous Medium With Internal Heat Generation (76-HT-EE) **HT 49**

Thermal Entrance Regions
A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Thermal Expansion
Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**
Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

Thermal Instability
Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**
Effect of Thermal Instability on Thermally Developing Laminar Channel Flow (76-HT-R) **HT 62**
Theory on Thermal Instability of Binary Gas Mixtures in Porou Media (76-HT-T) **HT 35**
Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Thermal Radiation
Theoretical Determination of Band Absorption With Specific Application to Carbon Monoxide and Nitric Oxide (76-HT-1) **HT 432**

Thermal Radiative Properties
Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) **HT 438**

Thermal Ratcheting
Thermal Ratcheting of a Beam Element Having an Idealized Bauschinger Effect (75-WA/Mat-4) **MT 264**
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**

Thermal Shock Testing
Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**

Thermal Shock Treatment
On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) **AM 117**

Thermal Simulation
The Numerical Thermal Simulation of the Human Body When Undergoing Exercise or Nonionizing Electromagnetic Irradiation (76-HT-KK) **HT 284**

Thermal Storage
Packed Bed Thermal Storage Models for Solar Air Heating and Cooling Systems (TN) **HT 336**

Thermal Stresses
Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) **AM 431**
The Determination of Stresses and Temperatures in Cooling Bodies by Finite Elements (76-HT-YY) **HT 478**
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) **DS 156**
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**

Thermal Transients
Creep Testing at Variable Temperature and Load, Experimental and Computational Methods (75-WA/Mat-2) **MT 229**

Thermal-Electric Power Plants
Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**

Thermal-Hydraulic Transients
A Nonlinear Dynamic Model of a Once-Through Subcritical

Steam Generator (76-Aut-M) **DS 332**

Thermocouple Sensors
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**

Thermocouples
Error in Temperature Measurements Due to Conduction Along the Sensor Leads (75-WA/HT-92) **HT 491**

Thermo-Diffusive Ignition
An Asymptotic, Thermo-Diffusive Ignition Theory of Porous Solid Fuels (75-HT-20) **HT 269**

Thermodynamics
A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**

Thermoelastic Instability
Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**

Thermoelasticity
On the Heating of Insulated Bodies in Linear Thermoelasticity (BN) **AM 169**
Thermoelasticity of Cylindrically Anisotropic Generally Laminated Cylinders (76-APM-3) **AM 124**

Thermoelastics
Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**

Thermohaline Convection
The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**

Thermohydrodynamic Instabilities
An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**

Thermohydrodynamic Lubrication
The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**

Thermomechanical Loading
Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**

Thermoviscoelastic Medium
Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**
Spectral Representation of Wave Propagation in Thermoviscoelastic Medium I (BN) **AM 177**

Theses Topics
List of Theses Topics in Tribology—II (76-Lub-G) **L 393**

Thick-Walled Conduits
Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**

Thin Shells
Nonlinear Flexural Vibrations of Thin Shallow Translational Shells (BN) **AM 180**
Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**

Thin Struts
Initial Curvature and Lateral Load Effects on Thin Struts With Large Elastic Displacements (75-DE-M) **I 34**

Thomas, J. Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**

Thomas, L. C. An Experimental and Theoretical Study of Transitional Turbulent Pulsatile Flow in a Channel (76-APM-MM) **AM 559**; Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**; A Theoretical Study of Thermally Developing Fully Turbulent Boundary Layer Flow (TN) **HT 334**; A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**

Thomas, W. C. Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**

Thomas, Y. Analysis of DDC Experiment Based on State Space Methods (76-Aut-OO) **DS 324**

Thompson, B. S. A Variational Principle for the Elastodynamic Motion of Planar Linkages (76-DET-42) **I 1306**

Thompson, J. C. The Interface Boundary Conditions for Bolted Flanged Connections (76-PVP-4) **PVT 277**

Thompson, J. G. An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**

Thomsen, E. G. Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**

Thomsen, H. H. Drawing Solid Wires Through Soft Dies in Antiquity (75-WA/Prod-6) **I 201**

Thorley, A. R. D. Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**

Thornton, K. W. Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**

Thorpe, J. F. Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**; Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**

Thorsen, R. S. Transient Melting of a Solid Heated by a Condensing Saturated Vapor—Case 1: Negligible Interface Curvature (Er) **HT 143**

Three-Dimensional Boundary Layers
Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**

Three-Dimensional Components
A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbomachinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**

Three-Dimensional Effects
Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) **F 163**; (D) (AC) **F 172**

Three-Dimensional Impact Analysis
Elementary Three-Dimensional Interactive Rotor Blade Impact Analysis (75-WA/GT-15) **P 480**

Three-Dimensional Problems
On Numerical Solution of the Three-Dimensional Vorticity Equation (TB) **F 770**

Three-Mode Models
Mechanical Joints With Clearance: A Three-Mode Model (76-DET-52) **I 1319**

Through Cracks
Propagation and Opening of a Through Crack in a Pipe Subject to Combined Cyclic Thermomechanical Loading (75-PVP-23) **PVT 17**

Throughflow
The Boundary Layer Inside a Conical Surface Due to a Swirling Flow With Throughflow (76-APM-OO) **AM 564**

Through-Flow Calculations
A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**

Throw Techniques
The Dynamics of Discus Throw (76-WA/APM-34) **AM 531**

Thrust
Study of Flow and Thrust in Nozzle-Flapper Valves (D) **F 331**; (AC) **F 332**

Thrust Balancing
Thrust Balancing Exhaust Fitting for Safety and Relief Valves (76-PVP-1) **PVT 262**

Thrust Bearings
The Contribution of Fluid Film Inertia to the Thermohydrodynamic Lubrication of Sector-Pad Thrust Bearings (76-Lub-D) **L 125**
Dynamic Characteristics of Externally Pressurized Rectangular Porous Gas Thrust Bearings (76-Lub-A) **L 181**
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**
Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**
An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**
Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**

Tichenor, D. R. Dynamics of a Partially Full Cylinder Containing a Magnetic Liquid in a Magnetic Field (76-WA/APM-4) **AM 497**; Motion of a Hollow Cylinder Containing a Small Oscillator (BN) **AM 508**

Tiederman, W. G. Calculation of Velocity Profiles in Drag-Reducing Flows (TB) **F 563**

Tien, C. L. Calculations of Combined Radiation and Convection Heat Transfer in Rod Bundles Under Emergency Cooling Conditions (75-HT-64) **HT 414**; Thermal Analysis of a Fast-Moving Slab in Two Adjacent Temperature Chambers (TN) **HT 326**; Two-Dimensional Analysis of Conduction-Controlled Rewetting With Percursory Cooling (76-HT-WW) **HT 407**

Tightening Torque
Development of Design Charts for Bolts Preloaded up to the Plastic Range (75-DE-B) **I 849**

Tilting Pad Bearings
Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**
An Experimental Investigation of a Tilting-Pad, Compliant-Surface, Thrust Bearing (75-Lub-29) **L 95**
Performance Characteristics of Tilting Pad Thrust Bearings at High Operating Speeds (75-LubS-7) **L 81**; (D) **L 88**; (AC) **L 89**

Time Series Methods
Time Series Methods for the Synthesis of Random Vibration Systems (76-APM-A) **AM 159**

Time Series Techniques
A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**

Time-Dependent Deformation
Constitutive Relationships for the Time-Dependent Deformation of Metals (75-Mat-3) **MT 47**

Time-Dependent Failure
An Incremental Criterion for Time-Dependent Failure of Materials (76-Mat-H) **MT 140**

Time-Dependent Methods
Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356**; (D) **P 363**; (AC) **P 364**

Time-Varying Tension
Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**

Timoshenko Beams
Dynamic Stability of Timoshenko Beams by Finite Element Method (75-DET-78) **I 1145**; (D) **I 1149**; (AC) **I 1150**
Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**
Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Ting, T. C. T. *(reviewer)* Linear and Nonlinear Waves (BR) **AM 190**

Tipei, N. Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (D) (AC) **L 347**

Tipnis, V. A. Cutting Rate-Tool Life Characteristic Functions for Material Removal Processes—Part 1: Theory (75-Prod-4) **I 481**; (D) **I 495**; (AC) **I 496**; Part 2: Verification and Applications (75-Prod-5) **I 487**; (D) **I 495**; (AC) **I 496**

Tirosh, J. Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**

Tissue Reactions
Thermal Aspects of Cryosurgery **HT 543**

Titanium Oxycarbides
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**

Tobias, S. A. Dynamic Acceptance Tests for Horizontal Milling Machines Based on a Statistical Theory of Machine Tool Chatter (75-DET-21) **I 919**

Todreas, N. E. Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**; (Er) **HT 508**

Tolani, S. K. Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**

Tomizuka, M. The Human Operator in Manual Preview Tracking (an Experiment and Its Modeling Via Optimal Control) **DS 407**; "Optimum Linear Preview Control With Application to Vehicle Suspension"—Revisited (76-Aut-PP) **DS 309**

Tonnesen, J. Dynamic Film Pressure Measurements in Journal Bearings for Use in Rotor Balancing (75-DET-65) **I 92**; Experimental Parametric Study of a Squeeze Film Bearing (75-Lub-42) **L 206**; (D) (AC) **L 213**

Tool Design
Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) **AM 54**

Tool Life
An Analysis of Tool Life Based on Flank-Face Wear—Part 1: Theory (75-WA/Prod-28) **I 221**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) **I 227**
Cutting Rate-Tool Life Characteristic Functions for Material

Removal Processes—Part 1: Theory (75-Prod-4) I 481; (D) I 495; (AC) I 496; Part 2: Verification and Applications (75-Prod-5) I 487; (D) I 495; (AC) I 496

Tool Models
Application of MOIRE Technique to the Determination of Stresses on the Rake Surface of Single Point Cutting Tool Models (75-Prod-M) I 890

Tool Temperature Distribution
Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) I 607

Tool Wear
Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) I 251
Investigation of the Flank Wear of Cemented Carbide Tools (75-WA/Prod-19) I 246
Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) I 279
Surface Integrity in Machining AISI 4340 Steel (75-WA/Prod-33) I 999; (D) I 1006, 1007; (AC) I 1007

Tools
The Mechanical State of the Sublayer of a Surface Generated by Chip-Removal Process—Part 1: Cutting With a Sharp Tool (75-WA/Prod-9) I 1192; (D) I 1199; (AC) I 1200

Tooth Contact Stresses
Reduction of the Contact Stress in Internal Gear Pumps (76-Det-40) I 1296

Tooth Flanks
Instantaneous Behavior of Lubricating Oil Supplied onto the Tooth Flanks and Its Influence on the Scoring Resistance of Spur Gears (75-PTG-A) I 635; (D) I 641; (AC) I 643

Top Water
Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) F 87; (D) F 94, 95; (AC) F 96

Toridic, T. G. Elastic-Plastic Analysis of Curved Structures Subjected to Static and Dynamic Loads (Er) PVT 198

Torisaki, T. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) P 103

Toroidal Seals
On Reciprocating Toroidal Seals (75-WA/DE-20) I 783

Torque Fluctuation
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) I 968

Torrance, K. E. Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) HT 42

Torsion
Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) AM 663
Torsion of a Rigid Cylinder Embedded in an Elastic Half Space (76-APM-FF) AM 419

Torsional Fatigue
The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) MT 244

Torsional Frequencies
Lower Bound for Fundamental Torsional Frequencies (BN) AM 510

Toscano, W. M. Thermal Radiative Properties of the Noble Metals at Cryogenic Temperatures (76-HT-6) HT 438

Townsend, D. P. Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) L 267; (D) L 275; (AC) L 276; A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) L 418; (D) (AC) L 425

Townsend, M. A. Design of Semiautomatic Standardizing Machines for Load Cells Testing (75-DET-97) I 124; A Generalized Return Vector for Projection Methods in Optimization With Nonlinear Constraints (75-DET-87) I 816; Optimization of Radiating Fin Arrays With Respect to Weight HT 643

Tracey, D. M. Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) MT 146

Trachman, E. G. Design Equations for the Short-Time Viscosity Behavior of a Lubricant (TB) L 476; A Numerical Procedure for Designing Profiled Rolling Elements (76-LubS-7) L 547; (D) (AC) L 552; Prediction of Traction in Sliding EHD Contacts (D) (AC) L 366

Track Rollers
Dynamic Life Estimation for Track Surfaces Under Periodic Loadings and Nonuniform Backup Supports (76-LubS-12) L 602

Traction
Prediction of Traction in Sliding EHD Contacts (75-Lub-7) L 362; (D) L 365, 366; (AC) L 366
A Simplified Model for the Elastohydrodynamic Traction Between Rollers (76-Lub-6) L 357; (D) F 361
Traction Characteristics of a MIL-L-7808 Oil L 607; (D) (AC) L 612

Tractrix Die
Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) MT 337

Trains
Regenerative Drive for Subway Trains—Part 1: Mechanical Accumulator Design (76-RT-1) I 737; Part 2: Overall System Model (76-RT-2) I 744; Part 3: System Evaluation (76-RT-3) I 751; Part 4: Overall System Performance (76-RT-4) I 756

Trajectories
Optimal Command Generation for Tracking a Class of Discontinuous Trajectories (76-Aut-R) DS 167
Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (76-FE-8) F 667; (D) (AC) F 673

Transendothelial Albumin Transport
An In Vitro Study of Transendothelial Albumin Transport in a Steady State Pipe Flow at High Shear Rates (76-FE-P) F 488

Transfer Characteristics
Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) HT 26

Transfer Functions
The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) F 182
Transfer Functions of Hyperbolic Distributed Parameter Systems (TB) DS 318

Transient Analysis
Transient Analysis of Offshore Loading Systems (D) I 383; (AC) I 384

Transient Boundary Layers
Transient Boundary Layers Between Porous Plates (76-WA/APM-32) AM 555

Transient Cavitation
Protection of Drain Pumps Against Transient Cavitation (75-WA/Pwr-4) P 401

Transient Filtration
Transient Filtration in a Porous Elastic Cylinder (76-WA/APM-16) AM 594

Transient Heat Transfer
A Study of Transient Heat Transfer in Long Insulated Wires (76-HT-U) HT 127

Transient Melting
Transient Melting of a Solid Heated by a Condensing Saturated Vapor—Case 1: Negligible Interface Curvature (Er) HT 143

Transient Modal Simulation
A Modal Transient Rotordynamic Model for Dual-Rotor Jet Engine Systems (75-DE-S) I 876

Transient Motion
Stability and Transient Motion of a Plain Journal Mounted in Flexible Damped Supports (75-DET-116) I 576

Transient Natural Convection
Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C HT 581

Transient Response
Linear Transient Response of a Flexible Rotor Supported in Gas-Lubricated Bearings (75-Lub-40) L 57
A Transient Response Approximation for Noncircular Fluid Transmission Lines F 244
Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) AM 625
Transient Response of Solid Sensible Heat Thermal Storage Units—Single Fluid (76-HT-XX) HT 471
Transient Response of Straight Fins: Part II (TN) HT 324
Transient Response of Viscoplastic and Viscoelastic Shells Submerged in Fluid Media (76-APM-K) AM 137

Transient Shaft Vibrations
Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) F 674; (D) F 679, 680; (AC) F 680

Transient Temperature Distribution
Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) HT 221

Transient Torsional Vibration
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) I 968

Transient Voiding
Local Film Thickness During Transient Voiding of a Liquid-Filled Channel (75-WA/HT-27) HT 159

Transients
Minimal Time Start-Up Schedules for Industrial Processes With Constraint on Transient Thermal Stress in the Apparatus (76-Aut-N) DS 156

Transit Velocities
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) F 443

Transition
A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (75-GT-34) P 229; (D) P 238, 239; (AC) P 239

Transition Temperature
A Comparison of Charpy V-Notch, Dynamic Tear, and Precracked Charpy Impact Transition-Temperature Curves for AAR Grades of Cast Steel (75-RT-1) I 446; (D) (AC) I 452

Transmittances
An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) DS 367

Transonic Compressors
Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) P 165

Transonic Flow
Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) P 356; (D) P 363; (AC) P 364
Transonic Flow Around Rotor Blade Elements (D) (AC) F 122

Transpiration Heating
Transient Temperature Distributions Within Porous Slabs Subjected to Sudden Transpiration Heating (76-HT-LL) HT 221

Transport Laws
Deviations From the Linear Transport Laws and Corrections to the Onsager Reciprocal Relations (76-WA/APM-2) AM 409

Transport-Reaction Mechanism
Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) HT 114

Transportation
Scheduling Delays in Synchronous Transportation Networks DS 173
What Limits the Speed of Marine Transportation? F 1

Transportation Vehicles
Analytical Model for Guideway Surface Roughness DS 425
On Using the ISO Standard To Evaluate the Ride Quality of Broad-Band Vibration Spectra in Transportation Vehicles (TB) DS 440

Transverse Curvature
An Approximate Method for the Solution of a Class of Nonsimilar Laminar Boundary Layer Equations (75-FE-28) F 292
Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) F 116

Transverse Fluid Loading
Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) DS 286

Transverse Isotropy
Axisymmetric Thermal Stresses in a Transversely Isotropic Circular Cylinder Having a Spherical Cavity (76-APM-DD) AM 431

Transverse Loads
The Stability of a Spinning Elastic Disk With a Transverse Load System (76-WA/APM-1) AM 485

Transverse Mass Motion
Response of a String to an Accelerating Mass (76-WA/APM-26) AM 675

Transverse Surface Motion
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) F 354; (D) (AC) F 363

Transverse Vibration
Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) AM 366

Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Trash Extraction

The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**

Trasi, S. R. On the Analysis of Residual Stresses Introduced in Sheet Metals by Thermal Shock Treatment (76-APM-13) **AM 117**

Tribology

List of Theses Topics in Tribology—II (76-Lub-G) **L 393**

The Mechanics of the Contact Between Deformable Bodies (BR) **AM 701**

Principles and Applications of Tribology (BR) **L 635**

Trogdon, S. A. Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**

Truck-Mounted Cranes

Methods for Improving the Knuckle Boom Capacity in Truck-Mounted Cranes (76-DE-34) **I 1183**

True, M. E. Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**

Truesdell, C. *(editor)* Mechanics of Solids (BR) **AM 382**

Trumpler, P. R. Experiments on Oil-Film Dampers for Turbomachinery (D) **P 399;** (AC) **P 400**

Tsai, C. L. Analytical Investigation of the Effect of Tool Wear on the Temperature Variations in a Metal Cutting Tool (75-WA/Prod-30) **I 251**

Tsao, Y. H. A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (D) (AC) **L 432**

Tsokos, C. P. Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**

Tsokos, J. O. Statistical Modeling of Pharmacokinetic Systems (75-WA/Aut-5) **DS 37**

Tsuei, Y. G. Free Boundary Problem for the Laplace Equation With Application to ECM Tool Design (76-APM-6) **AM 54**

Tube Banks

An Experimental Investigation of Heat Transfer Around A Tube in A Bank (76-HT-AAA) **HT 503**

Tube Heat Exchangers

Experiments on a Three-Row Fin and Tube Heat Exchanger (TN) **HT 520**

Experiments on the Transfer Characteristics of a Corrugated Fin and Tube Heat Exchanger Configuration (76-HT-V) **HT 26**

Tube Rotational Restraint

Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) **I 1157**

Tube-to-Tubesheet Welds

Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**

Tubes

Analysis of the Radial Forging Process for Manufacturing Rods and Tubes (75-WA/Prod-35) **I 265**

An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**

Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**

Combined Free and Forced Convection in Inclined Circular Tubes (TN) **HT 322**

On the Creep Rupture of a Tube and a Sphere (D) (AC) **AM 376**

Heat Transfer in Internally Finned Tubes (76-HT-SS) **HT 257**

Hydrodynamic Inertia Coefficients for a Tube Surrounded by Rigid Tubes **PVT 190**

Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**

Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

A Note on Vortex Breakdown in a Cylindrical Tube (TB) **F 322**

Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**

Tubesheets

Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) **I 1157**

Tubular Goods

Resistance of Commercially Available High Strength Tubular Goods to Sulfide Stress Cracking (75-Pet-40) **I 717**

Tubular Exchangers

The Tubular Exchanger Manufacturers Association and Industry **PVT 185**

Tubular Ultrafiltration

Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Tungsten Carbide Specimens

Brittle Fracture Under a Complex State of Stress (75-WA/Prod-14) **I 206**

Tunnels

Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (75-WA/FE-15) **F 455**; (D) **F 459, 460**; (AC) **F 460**

Turbine Blades

Application of CAD/CAM in Forging Turbine and Compressor Blades (75-GT-42) **P 290**; (D) **P 296**

Missile Firing Tests at Stationary Targets in Support of Blade Containment Design (75-GT-47) **P 159**

Modeling of Turbine Blade Tip Contact (75-WA/GT-14) **P 435**

Pressure Loss Coefficient of Impingement Cooled Leading Edge System of a Turbine Blade (TB) **P 554**

Turbine Blading

Numerical Computation of Nonstationary Aerodynamics of Flat Plate Cascades in Compressible Flow (75-GT-5) **P 165**

Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading (TB) **F 573**

Turbine Cooling

Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Turbine Performance

Effect of Solid Particles on Turbine Performance (75-GT-41) **P 47**

Influences of Manufacturing Tolerances and Surface Roughness of Blades on the Performance of Turbines (75-GT-35) **P 29**

Turbines

Losses in Radial Inflow Turbines (76-FE-9) **F 364**; (D) **F 371, 372**; (AC) **F 372**

Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

Turbomachine Blade Vibration

Vibration Modes of Mistuned Bladed Disks (75-GT-114) **P 349**

Turbomachinery

An Analysis on the Flow in a Casing Induced by a Rotating Disk Using a Four-Layer Flow Model (75-WA/FE-11) **F 192**

Assessment of Three-Dimensional Inviscid Effects in Turbomachinery Using Simple Models (75-WA/FE-8) **F 163**; (D) (AC) **F 172**

Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

Experiments on Oil-Film Dampers for Turbomachinery (75-WA/GT-19) **P 393;** (D) **P 399;** (AC) **P 400**

A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbomachinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**

Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (75-WA/FE-5) **F 236**; (D) **F 242**; (AC) **F 243**

Technology Status for Blade Flutter in Axial Turbomachinery (Op) **F 337**

Three-Dimensional Boundary-Layer Computation on the Stationary End-Walls of Centrifugal Turbomachinery (76-FE-14) **F 431**; (D) **F 441, 442**; (AC) **F 442**

Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**

Transonic Flow Analysis in Axial-Flow Turbomachinery Cascades by a Time-Dependent Method of Characteristics (75-GT-8) **P 356;** (D) **P 363;** (AC) **P 364**

Turbomachinery Numerical Analysis

REVIEW—Progress in Numerical Turbomachinery Analysis **F 592**

Turbomachines

A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**

Minimizing Assembly Runout in Turbo-machines Made With Curvic* Couplings (75-GT-43) **P 37**

Performance and Flow Regime of Annular Diffusers With Axial Turbomachine Discharge Inlet Conditions (D) (AC) **F 585**

Turbopumps

The Dynamic Transfer Function for a Cavitating Inducer (75-WA/FE-16) **F 182**

Turborotor Systems

Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**

The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**

Turboshaft Engines

Performance Development of the Gem Turboshaft Engine (75-GT-28) **P 114**

Turbulence

Adiabatic Wall Effectiveness of a Turbulent Boundary Layer With Slot Injection (76-HT-JJ) **HT 240**

Analysis of Turbulent Boundary Layers (BR) **AM 189**

Application of a General Boundary Layer Analysis to Turbulent Boundary Layers Subjected to Strong Favorable Pressure Gradients (D) **F 129**; (AC) **F 130**

Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**

Evaporation and Heating With Turbulent Falling Liquid Films (TN) **HT 315**

Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Heat Transfer From Spheres in the Naturally Turbulent, Outdoor Environment (75-WA/HT-57) **HT 649**

Influence of the Axisymmetric Contraction Ratio on Free-Stream Turbulence (76-FE-Q) **F 506**; (D) **F 776**; (AC) **F 777**

Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**

A Reynolds Stress Model for Turbulent Corner Flows—Part I: Development of the Model (76-FE-C) **F 261**; Part II: Comparisons Between Theory and Experiment (76-FE-D) **F 269**; (D) **F 276**; (AC) **F 277**

Theoretical Analysis of the Effect of Compressibility and Free-Stream Turbulence on Free-Mixing Turbulent Gas Flows (76-APM-O) **AM 217**

Turbulence Amplifiers

Static Characteristics of Shrouded Acoustically Controlled Turbulence Amplifiers (75-WA/Flcs-9) **F 476**

Turbulence Intensities

Fluid Mixing With Unequal Free-Stream Turbulence Intensities (75-WA/FE-10) **F 229**; (D) (AC) **F 235**

Turbulence Measurements

A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**

Turbulence Quantities

A Method of Measuring the Three-Dimensional Mean Flow and Turbulence Quantities Inside a Rotating Turbomachinery Passage (75-GT-4) **P 137**; (D) **P 144**; (AC) **P 146**

Turbulent Boundary Layers

Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Measured $\overline{uw}$ Stress Gradients in a Three-Dimensional Turbulent Boundary Layer (TB) **F 768**

A Note on the Peak of Johnston's Triangular Model in Three-Dimensional Turbulent Boundary Layers (TB) **F 577**

Oscillating Turbulent Flow in a Conical Diffuser **F 695**; (D) **F 700, 701**; (AC) **F 701**

A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**

The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**

A Theoretical Study of Thermally Developing Fully Turbulent Boundary Layer Flow (TN) **HT 334**

Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**

Turbulent Boundary Layers on Centrifugal Compressor Blades: Prediction of the Effects of Surface Curvature and Rotation (76-FE-10) **F 374**; (D) (AC) **F 381**

The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**

Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (D) **AM 699**

Turbulent Energy
The Response of a Developed Turbulent Boundary Layer to Local Transverse Surface Motion (76-FE-3) **F 354**; (D) (AC) **F 363**
Turbulent Flow
On the Calculation of Horizontal, Turbulent, Free Shear Flows Under Gravitational Influence (76-HT-S) **HT 81**
Computation of Annular, Turbulent Flow With Rotating Core Tube **F 753**
Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**
Effects of the Axisymmetric Contraction Shape on Incompressible Turbulent Flow (75-FE-13) **F 58**; (D) **F 68, 69**; (AC) **F 69**
Experimental and Analytical Study of Axial Turbulent Flows in an Interior Subchannel of a Bare Rod Bundle (75-WA/HT-51) **HT 262**; (Er) **HT 508**
Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**
A Numerical Analysis of Heat Transfer to Fluids Near the Thermodynamic Critical Point Including the Thermal Entrance Region **HT 609**
The Numerical Prediction of Turbulent Flow and Heat Transfer in the Entrance Region of a Parallel Plate Duct (76-HT-36) **HT 594**
Pressure Development in the Entrance Region and Fully Developed Region of Generalized Channel Turbulent Flows (76-APM-16) **AM 13**
Production and Dissipation of Energy in the Turbulent Flow of a Particle-Fluid Mixture, With Some Results on Drag Reduction (76-WA/APM-24) **AM 543**
Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**
Turbulent Fluctuations
Turbulent Fluctuations and Heat Transfer for Separated Flow Associated With a Double Step at Entrance to an Enlarged Flat Duct **HT 588**
Turbulent Free Convection
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
Turbulent Free Jets
Momentum Flux Development From Three-Dimensional Free Jets (76-FE-E) **F 256**; (D) (AC) **F 260**
Turbulent Friction
An Improvement in the Calculation of Turbulent Friction in Rectangular Ducts (75-WA/FE-12) **F 173**; (D) **F 180, 181**; (AC) **F 181**
Turbulent Jet Velocity
A Simple Method for Calculating the Turbulent Jet Velocity in a Conical Annulus (TB) **F 766**
Turbulent Jets
Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**
Prediction of the Trajectory of a Turbulent Jet Injected Into a Crossflowing Stream (76-FE-8) **F 667**; (D) (AC) **F 673**
Prediction of Turbulent Jets in Coflowing Quiescent Ambients (D) **F 332**; (AC) **F 333**
Signal Transit Velocities in a Turbulent Plane Jet (75-WA/FE-1) **F 443**
Turbulent Liquid Films
On the Prediction of Heat Transfer Across Turbulent Liquid Films (76-HT-EEE) **HT 496**
Turbulent Mixing
Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**
Turbulent Mixing and Reacting Flow Characterization (Er) **F 198**
Turbulent Momentum Transport
An Experimental and Theoretical Study of Transitional Turbulent Pulsatile Flow in a Channel (76-APM-MM) **AM 559**
Turbulent Pipe Flow
Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**
Turbulent Pulsatile Flow
Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (D) **F 778**; (AC) **F 780**
Turbulent Shear Flow
Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**
Turbulent Shear Layers
A Modified Law of the Wake for Turbulent Shear Layers (TB) **F 578**
Turbulent Transitional Flow
A Unified Model for Turbulent and Laminar Momentum Transfer: Channel Flow **AM 8**
Turbulent Transport
Turbulent Transport to a Rotating Cylinder for Large Prandtl or Schmidt Numbers (Er) **HT 302**
Turbulent Unseparated Flow
Analysis of Turbulent Unseparated Flow in Subsonic Diffusers (D) (AC) **F 776**
Turbulent Wakes
Three Dimensional Characteristics of Turbulent Wakes Behind Rotors of Axial Flow Turbomachinery (75-GT-1) **P 218**; (D) (AC) **P 227**
Turbulent Wall Jets
Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**; (D) **F 780, 782**; (AC) **F 782**
Turner, A. P. L. *(author)* Elements of the Mechanical Behavior of Solids (BR) **AM 383**
Turnpike Theorem
Further Aspects of Turnpike Theory in Continuous Time With Applications (76-Aut-X) **DS 85**
Turteltaub, M. J. Balloon Collapse in Ring-Spinning (75-Tex-2) **I 658**
Tuzinkiewicz, A. T. Losses in Radial Inflow Turbines (D) **F 371**; (AC) **F 372**
Twist Drills
Effects of Built-Up Edge in Drilling (75-WA/Prod-17) **I 287**
On the Development of Multi-Edge Cutting Tools for BTA Deep-Hole Machining (75-Prod-3) **I 474**
Twisted Cylinders
On the Dynamic Analysis of Curved and Twisted Cylinders Transporting Fluids **PVT 143**
Twisted-Tape Inserts
Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**
Two-Bar Assembly
Thermal Ratcheting With Kinematic Hardening in a Two-Bar Assembly With Unequal Areas and Properties (75-WA/Mat-1) **MT 256**
Two-Bar Structures
A Theoretical and Experimental Investigation of Creep Problems With Variable Temperature (76-WA/APM-25) **AM 639**
Two-Die Swaging
Metal Flow in Two-Die Swaging (75-WA/Prod-23) **I 1121**
Two-Dimensional Analysis
Two-Dimensional Analysis of Conduction-Controlled Rewetting With Precursory Cooling (76-HT-WW) **HT 407**
Two-Dimensional Cylinders
A Note on the Two-Dimensional Cylinder Wake (TB) **F 318**
Two-Dimensional Diffusers
Effects of System Rotation on the Performance of Two-Dimensional Diffusers (76-FE-15) **F 422**; (D) (AC) **F 429**
Two-Phase Flow
Two-Phase Flow Through Normal Shock Wave (D) (AC) **F 135**
Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**
Two-Phase Materials
The Modeling of Flow Concentration in Two-Phase Materials (75-Mat-7) **MT 180**
Two-Phase Slug Flow
Vertically Downward Two-Phase Slug Flow **F 715**
Two-Phase Systems
An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) **HT 616**
Tyagi, V. P. Analysis of Finite Cylinders Rotating Within Moderate Clearance Ratios (D) (AC) **F 162**
Type Wear
Abrasive Impact Wear of Type (75-Lub-28) **L 330**; (D) (AC) **L 334**

U

Udwadia, F. E. Identification of Structures Through Records Obtained During Strong Earthquake Ground Motion (75-DET-77) **I 1347**
Uherka, K. L. Prediction of Swirl and Inlet Turbulence Kinetic Energy Effects on Confined Jet Mixing (D) **F 123**; (AC) **F 125**
Ultimate Tensile Strength
The Relation Between Ultimate Tensile Strength and Carbide Size in Steel (75-Mat-18) **MT 173**
Umek, A. On the Influence of the Geometry of the Foundation on Its Impulse Response (76-APM-30) **AM 300**
Unbalance Response
The Dynamics of Rotor-Bearing Systems Using Finite Elements (75-WA/DE-19) **I 593**
Effect of Residual Shaft Bow on Unbalance Response and Balancing of a Single Mass Flexible Rotor—Part 1: Unbalance Response (75-GT-48) **P 171**; Part 2: Balancing (75-GT-49) **P 182**; (D) **P 187, 188**; (AC) **P 188**
Unbonded Contact Problems
On Some Unbonded Contact Problems in Plane Elasticity Theory (76-APM-W) **AM 263**
Unconstrained Pipelines
Physical Interpretations of the Instabilities Encountered in the Deflection Equations of the Unconstrained Pipeline (75-Pet-1) **I 1099**
Underclad Cracking
Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**
Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**
Underwater Divers
Automatic Orientation Control Device for Underwater Divers (76-DET-23) **I 1272**
Optimum Design of Automatic Depth Control System for Underwater Divers (75-DET-96) **I 1042**
Underwater Hemispherical Shells
Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**
Underwood, A. F. *(recipient)* 1975 Mayo D. Hersey Award: The "Education" of a Lubrication Engineer **L 2**
Unemployment
Price Level Stabilization Experiments Using the Dynamic Phillips Curve Concept (76-Aut-T) **DS 68**
Uniaxial Creep
Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/APM-6) **AM 445**
Uniaxial Tension
Stress Concentration Factors From Overlapping Stress Field in Uniaxial Tension (74-WA/DE-3) **I 332**
Uniform Compression
Buckling of an Elliptical Plate With Simply Supported Edge Under Uniform Compression (76-APM-AA) **AM 455**
Uniform Pressure
Nonlinear Stresses and Deflections of Beams Subjected to Random Time Dependent Uniform Pressure (75-DET-23) **I 1014**
Uniform Temperature Rise
Stress-Focusing Effect in a Uniformly Heated Cylindrical Rod (76-APM-Z) **AM 464**
Unny, T. E. Free Convective Heat Transfer Across Inclined Air Layers (75-HT-55) **HT 189**
Ünsal, M. Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**
Unstaggered Cascades
Forces on Unstaggered Airfoil Cascades in Unsteady In-Phase Motion (76-FE-S) **F 521**
Unsteady Boundary Layers
Approximate Solutions of the Unsteady Boundary-Layer Equations (76-APM-GG) **AM 396**
Unsteady Flow
Unsteady Effects in Flow Rate Measurement at the Entrance of a Pipe (TB) **F 562**
Unsteady Pressure Distributions
Unsteady Pressure Distributions on Oscillating Airfoils in a Supersonic Cascade (TB) **P 533**
Upper Bound Analysis
Analysis of Combined Backward-Forward Extrusion (75-Prod-C) **I 438**
Upper Bound Loads
Kinetic and Dynamic Effects on the Upper-Bound Loads in Metal-Forming Processes (76-APM-28) **AM 314**
Upsetting
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**
Upstream Influence
Observations of Wave Motion and Upstream Influence in a

Stratified Fluid (76-APM-Q) **AM 222**

Upstream Pulsators
Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**

Urban Mass Transit
Scheduling Delays in Synchronous Transportation Networks **DS 173**

Urban Planning
Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**

Urban Revitalization
Large-Scale Systems Methodology and Urban Revitalization (F) **DS 357**

Urbanization
Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

Ushiyama, I. Theoretically Estimating the Performance of Gas Turbines Under Varying Atmospheric Conditions (75-GT-115) **P 69**; (Er) **P 385**

U-Tube Exchangers
Tubesheet Design in U-Tube Exchangers Including the Effect of Tube Rotational Restraint (76-DE-8) **I 1157**

V

Vacuum Columns
Flexible Wall Planar Flow Model for Tape Behavior in Vacuum Columns (75-Lub-41) **L 344**; (D) (AC) **L 347**

Valori, R. The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (76-LubS-8) **L 553**; (D) **L 558–562**; (AC) **L 563**

Valves
Friction Area and Nozzle Area for Valves and Fittings as New All-Purpose Flow Parameters (76-Pet-2) **PVT 309**

Vance, J. M. Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (D) **I 1143**; (AC) **I 1144**; Experiments on Oil-Film Dampers for Turbomachinery (D) **P 399**; (AC) **P 400**

Van Dooren, R. MHD Pipe Flow With Variable Wall Porosity (BN) **AM 172**

Van Dyke, M. *(author)* Perturbation Method in Fluid Mechanics (BR) **AM 189**

van Heiningen, A. R. P. Numerical Prediction of the Flow Field and Impingement Heat Transfer Caused by a Laminar Slot Jet (75-WA/HT-99) **HT 654**; Numerical Solution of the Three-Dimensional Navier-Stokes Equations With Applications to Channel Flows and a Buoyant Jet in a Crossflow (D) **AM 379**; (AC) **AM 380**

Vannoy, D. Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**

VanSchaick, T. E. Evaluation of Proposed ASME Performance Test Code 36 for Sound Power Level Determination of Large Steam Turbine-Generators (75-WA/PTC-2) **P 493**; (D) **P 499**; (AC) **P 500**

Vant-Hull, L. L. A Theory of Concentrators of Solar Energy in a Central Receiver for Electric Power Generation (D) (AC) **P 375**

Vapor-Driven Ejectors
Theoretical Model for Predicting Steam-Ejector Performance (75-WA/PID-1) **I 645**

Vapor Flow
Heat Transfer Across a Turbulent Falling Film With Cocurrent Vapor Flow (TN) **HT 319**

Vaporization-Condensation Process
Transport-Reaction Mechanism of Mist Formation Based on the Critical Supersaturation Model (76-HT-CC) **HT 114**

Varadan, T. K. The Inelastic Large Deformation of Beams (BN) **AM 689**

Vardy, A. E. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 584**; (AC) **F 585**

Variable Amplitude Loading
Analysis of Fatigue-Crack Growth in a High-Strength Steel—Part II: Variable Amplitude Block Loading Effects (75-WA/PVP-23) **PVT 208**

Variable-Area Combustion
A One-Dimensional Variable Area Computer Simulation of Combustion in a Divided Chamber, Stratified Charge Engine (75-WA/DGP-1) **P 441**; (D) **P 446**; (AC) **P 447**

Variable Permeability
Natural Convection in a Porous Medium: Effects of Confinement, Variable Permeability, and Thermal Boundary Conditions (76-HT-Y) **HT 42**

Variational Formulations
A Variational Forumlation of the Compressible Throughflow Problem (75-GT-32) **P 1**

Varying Atmospheric Conditions
Theoretically Estimating the Performance of Gas Turbines Under Varying Atmospheric Conditions (75-GT-115) **P 69**

Vashi, K. M. Application of Normal Mode Theory and Pseudoforce Methods to Solve Problems With Nonlinearities **PVT 151**

Vaughan, D. A. Corrosion and Deposits From Combustion of Solid Waste—Part IV: Combined Firing of Refuse and Coal (75-WA/CD-4) **P 369**

Vaughan, D. K. A Comparison of the Capability of Four Hardening Rules to Predict a Material's Plastic Behavior (75-PVP-43) **PVT 66**

Vaughn, E. A. The Effect of Certain Machine Parameters and Fiber Preparation on the Properties of Open-End Cotton Yarns (75-Tex-4) **I 670**; The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**

V-Belt Drives
A Note on Slip in V-Belt Drives (TB) **I 1366**

V-Belts
V-Belt Life Prediction and Power Rating (75-WA/DE-26) **I 340**; (D) (AC) **I 347**

Vehicle Center-of-Gravity
Analysis of a Platform for Measuring Moments and Products of Inertia of Large Vehicles (76-Aut-0) **DS 186**

Vehicle Engines
Emissions as a Performance Criterion for Adaptive Control of Road Vehicle Engines (TB) **DS 196**

Vehicle Platoons
Emergency Control of Vehicle Platoons: Control of Following-Law Vehicles (76-Aut-CC) **DS 239**
Emergency Control of Vehicle Platoons: System Operation and Platoon Leader Control (76-Aut-DD) **DS 245**

Vehicle Stability
On the Stability in the Sense of Liapunov of a Rubber Tire Vehicle (76-Aut-J) **DS 180**

Vehicle Suspensions
"Optimum Linear Preview Control With Application to Vehicle Suspension"—Revisited (76-Aut-PP) **DS 309**

Vehicle Suspension Systems
The Design of Variable Antidive Vehicle Suspension Systems (75-WA/DE-24) **I 171**

Vehicle Transit
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (75-WA/FE-13) **F 224**
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 583, 584**; (AC) **F 585**
Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (Er) **F 583**

Velocity
The Effects of Main-Flow Radial Velocity on the Stability of Developing Laminar Pipe Flow (76-APM-19) **AM 209**
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**
Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**
Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**

Velocity Correlations
Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**

Velocity Distributions
Velocity Distribution in Semiopen Channels (TB) **F 764**

Velocity Fields
Velocity Field for a Gaussian Circular Jet With Normal Impingement (76-APM-LL) **AM 551**

Velocity Fluctuations
Velocity Fluctuation in Four-Bar Linkages and Slider-Crank Mechanisms (76-DET-10) **I 1255**

Velocity Measurements
A Separated and Reattached Flow on a Blunt Flat Plate (75-FE-18) **F 79**; (D) **F 84, 85**; (AC) **F 86**
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**

Velocity Profiles
Calculation of Velocity Profiles in Drag-Reducing Flows (TB) **F 563**
A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**
Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**; (D) **AM 699**

Velocity Ratios
On Extreme Velocity Ratios in Spherical Four-Link Mechanisms (76-DET-17) **I 1260**

Velocity Slip
Effect of Velocity Slip on the Burning Rate of Fuel Particles (Er) **F 363**
Effect of Velocity Slip in an Externally Pressurized Porous Thrust Bearing Working With an Incompressible Fluid (76-APM-BB) **AM 404**

Velocity Wave Forms
Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Vent Pipes
Steam Flow Through Safety Valve Vent Pipes (75-WA/FE-23) **F 199**; (D) **F 206**; (AC) **F 207**

Ventricular Wall
Stresses in Ventricular Wall (76-APM-31) **AM 194**

Venturi
Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**

Vermeulen, P. J. The Acoustically Excited Flame (75-GT-39) **P 147**; (D) **P 157**; (AC) **P 158**

Vertical Cylinders
Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**

Vertical Melting Surfaces
Laminar Film Condensation on a Vertical Melting Surface (76-HT-AA) **HT 108**

Vertical Needles
Free Convection Heat Transfer From Vertical Needles (TN) **HT 522**

Vertical Plates
Combined Radiation and Developing Laminar Free Convection Between Vertical Flat Plates With Asymmetric Heating (75-HT-19) **HT 95**
Laminar and Turbulent Free Convection From Elliptic Cylinders, With a Vertical Plate and Horizontal Circular Cylinder as Special Cases (76-HT-DD) **HT 72**
Mixed Convection On a Vertical Plate With an Unheated Starting Length **HT 576**

Vertical Walls
Locally Nonsimilar Solution for Laminar Free Convection Adjacent to a Vertical Wall (TN) **HT 321**

Vessel Orientation
Thermal Instabilities in Discharging Gas Reservoirs (76-HT-GGG) **HT 360**

Vibrating Strings
Dynamic Properties of a Moving Thread Line (75-DE-N) **I 868**

Vibrating Structures
Multiple Internal Resonance in a Structure-Liquid System (75-DET-133) **I 1092**

Vibrating Systems
Dunkerley-Mikhlin Estimates of Gravest Frequency of a Vibrating System (76-APM-33) **AM 345**

Vibration
Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**
Bending and Vibration of Plates of Variable Thickness (75-WA/DE-12) **I 166**
Epicyclic Gear Vibrations (75-DET-14) **I 811**
Free Vibration of Fluid-Coupled Coaxial Cylindrical Shells of Different Lengths (75-WA/APM-3) **AM 480**
A General Method for Simulating the Flow Dependent Nonlinear Vibrations of Compressor Reed Valves (75-DET-26) **I 930**
Mechanical Separation Phenomena in Picking Mechanisms of Fly-Shuttle Looms (75-Tex-6) **I 835**
Modal Truncation of Substructures Used in Free Vibration Analysis (75-DET-82) **I 827**
Suppression of Rotor-Bearing System Vibrations Through Flexible Bearing Support Damping (75-DET-117) **I 1053**
Transient Torsional Vibration of Steam Turbine and Generator Shafts due to High Speed Reclosing of Electric Power Lines (75-DET-71) **I 968**
Transverse Vibration of a Uniform, Simply Supported Timoshenko Beam Without Transverse Deflection (76-WA/APM-20) **AM 671**

Vibration of an Asymmetrically Mounted Rotor With Gyroscopic Effects (75-DET-58) **I 327**

Vibration of Deriaz Pumps at Dos Amigos Pumping Plant (75-FE-31) **F 674**; (D) **F 679, 680**; (AC) **F 680**

The Vibration of an Elliptic Ring Membrane (BN) **AM 692**

Vibration of Solids and Structures Under Moving Loads (BR) **AM 524**

Vibration Analysis

Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**

The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**

Vibration Analysis

Technology Transfer in the Vibration Analysis of Linearly Tapered Cantilever Beams (76-DET-56) **I 1335**

Vibration Damping

Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Vibration Isolation

Effect of Pressurization on the Vibration Isolation Capability of Squeeze Film Bearings (75-DET-70) **I 109**; (Er) **I 736**

Vibration Modes

Vibration Modes of Mistuned Bladed Disks (75-GT-114) **P 349**

Vibration Reduction

Application of the Optimal Preview Control Theory to the Vibration Reduction of the Elastic Beam under Moving Load (75-DET-118) **I 320**

Vibrations

Axisymmetrical Vibrations of Underwater Hemispherical Shells (75-DET-32) **I 941**

Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**

Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneratiomn in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Phototype (75-DET-61) **I 956**

Large Amplitude Vibrations of Shallow Spherical Shell With Concentrated Mass (BN) **AM 363**

Nonlinear Vibrations of Thin Cylinders (BN) **AM 370**

Transverse Vibrations of a Tapered Beam Carrying a Concentrated Mass (BN) **AM 366**

Vibratory Identification

Vibratory Identification of Beam Boundary Conditions (76-WA/Aut-1) **DS 387**

Vibratory Rods

Added Mass and Damping of a Vibratory Rod in Confined Viscous Fluids (D) **AM 699**; (AC) **AM 700**

Vibratory Systems

On the Specification of Eigenvalues in Vibratory Systems (BN) **AM 359**

Vij, S. K. Squeeze Film Theory for Micropolar Fluids (D) **L 144**

Vinson, J. R. *(author)* Composite Materials and Their Use in Structures (BR) **MT 96**

Viscid-Inviscid Interactions

Viscid-Inviscid Interaction of Incompressible Separated Flows (76-WA/APM-7) **AM 387**

Viscoelastic Bodies

Contact Between Viscoelastic Bodies (76-WA/APM-19) **AM 630**

Viscoelastic Shells

The Vibrations of an Infinite Orthotropic Layered Cylindrical Viscoelastic Shell in an Acoustic Medium (76-WA/APM-33) **AM 668**

Viscoelastic Layers

Vibration Damping Characteristics of Multilayered Beams With Constrained Viscoelastic Layers (73-DE-C) **I 895**

Viscoelastic Liquids

Continuum Mechanics of Viscoelastic Liquids (BR) **AM 521**

Viscoelastic Timoshenko Beams

Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Viscoelasticity

Creep, Viscoelasticity and Creep Fracture in Solids (BR) **MT 191**

Viscoplasticity

Strain-Rate Effect in the Endochronic Theory of Viscoplasticity (76-APM-G) **AM 92**

Viscosity

Design Equations for the Short-Time Viscosity Behavior of a Lubricant (TB) **L 476**

Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (76-LubS-5) **L 500**; (D) **L 507**; (AC) **L 508**

Theoretical Solutions for Combined Forced and Free Convection in Horizontal Tubes with Temperature-Dependent Viscosity (76-HT-HHH) **HT 459**

Viscous Damping

Forced Vibrations of Viscoelastic Timoshenko Beams (75-DET-84) **I 820**

Identification of Viscous Damping in Structures From Modal Information (76-APM-36) **AM 335**

Viscous Fluids

Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**; (D) **AM 699**; (AC) **AM 700**

A Numerical Solution of Entrance Region Heat Transfer in Plane Couette Flow (76-HT-CCC) **HT 427**

Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**

The Squeezing of a Fluid Between Two Plates (76-WA/APM-14) **AM 579**

Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **L 214**; (D) (AC) **L 222**

Unsteady Hydromagnetic Boundary Layer in a Rotating Medium (76-APM-24) **AM 205**

Viscous Gas

Solid Particle Demixing in a Suspension Flow of Viscous Gas (D) **F 128**; (AC) **F 129**

Viscous Liquid Film

An Instability for Parallel Sliding of Solid Surfaces Separated by a Viscous Liquid Film (75-Lub-4) **L 157**

Viskanta, R. Modeling of Temperature and Pollutant Concentration Distributions in Urban Atmospheres **HT 662**

Visualization

Approximation for Determining Harmonically Excited Response of Nonclassically Damped Systems (75-DE-P) **I 43**

Visualization of Secondary Flows in Planar Nozzles (TB) **F 326**

Voelker, D. Transient Temperature Rise in Layered Media (TN) **HT 329**

Vohr, J. H. *(contributor)* List of Theses Topics in Tribology—II: Hydrodynamic Lubrication (76-Lub-G) **L 395**

Voigt Material

Wave Propagation in Finite Rods of Voigt Material (BN) **AM 182**

Vorbix Burner

The Vorbix Burner—A New Approach to Gas Turbine Combustors (75-GT-20) **P 123**

Vortex Breakdown

A Note on Vortex Breakdown in a Cylindrical Tube (TB) **F 322**

Vortex Degeneration

Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**

Vortex Flows

Decaying Annular Swirl Flow With Inlet Solid Body Rotation (75-FE-14) **F 33**

Vortex Shedding

Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**

Fluid Forces Induced by Vortex Shedding (75-FE-10) **F 19**; (D) **F 24, 25**; (AC) **F 25**

Vortex Spacing

Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**

Vortices

Some Characteristics of Cavity Flow Past Cylindrical Inducers in a Venturi (75-WA/FE-7) **F 461**; (D) (AC) **F 467**

Vorticity Equation

On Numerical Solution of the Three-Dimensional Vorticity Equation (TB) **F 770**

Vujanovic, B. The Practical Use of Gauss' Principle of Least Constraint (76-APM-P) **AM 491**

W

Wachspress, E. L. *(author)* A Rational Finite Element Basis (BR) **L 635**

Wachtell, G. P. Emissions Results From Coal Gas Burning in Gas Turbine Combustors (D) (AC) **P 96**

Wake Profiles

A Single Formula for the Complete Velocity Profile in a Turbulent Boundary Layer **F 723**; (D) **F 726**; (AC) **F 727**

Wake Sled

A Note on the Two-Dimensional Cylinder Wake (TB) **F 318**

Wakes

Flow Interaction Near the Tail of a Body of Revolution—Part 1: Flow Exterior to Boundary Layer and Wake (76-FE-M) **F 531**; (D) **F 546**; (AC) **F 548**; Part 2: Iterative Solution for Flow Within and Exterior to Boundary Layer and Wake (76-FE-N) **F 538**; (D) **F 546**; (AC) **F 548**

Guide Vane Vibration Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**; Part 2: Transferability From the Model to the Phototype (75-DET-61) **I 956**

A Modified Law of the Wake for Turbulent Shear Layers (TB) **F 578**

Semiempirical Analysis of Cavitation in the Wake of a Sharp-Edged Disk (TB) **F 560**

Velocity Correlation and Vortex Spacing in the Wake of a Vibrating Cable (75-FE-7) **F 10**; (D) (AC) **F 18**

Walburn, F. J. Pulsatile Blood Flow in a Channel of Small Exponential Divergence—Part II: Steady Streaming Due to the Interaction of Viscous Effects With Convected Inertia **F 707**; (D) (AC) **F 713**

Waldron, K. J. Elimination of the Branch Problem in Graphical Burmester Mechanism Synthesis for Four Finitely Separated Positions (75-WA/DE-23) **I 176**

Walker, G. J. A Family of Surface Velocity Distributions for Axial Compressor Blading and Their Theoretical Performance (75-GT-34) **P 229**; (D) **P 238, 239**; (AC) **P 239**

Walker, J. S. Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (D) (AC) **F 460**

Wall Friction

The Interaction of a Hot Gas Flow and a Cold Liquid Spray in Channels (75-HT-37) **HT 421**

Wall Jet-Receiver Interactions

Inviscid Approximations for Wall Jet-Receiver Interaction (D) (AC) **F 126**

Wall Jets

The Suppression of Flow Separation by Sequential Wall Jets (75-WA/FE-9) **F 447**; (D) **F 453**; (AC) **F 454**

Transverse Curvature Effect on the Flow Field in a Laminar Cylindrical Wall Jet (TB) **F 116**

Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**; (D) **F 780, 782**; (AC) **F 782**

Wall Porosity

MHD Pipe Flow With Variable Wall Porosity (BN) **AM 172**

Wall Region Periodicity

Theoretical and Experimental Study of Wall Region Periodicity for Turbulent Pulsatile Flow (75-FE-20) **F 27**; (D) **F 778**; (AC) **F 780**

Wall Shear Stress

Wall Shear Stress Inference for Three-Dimensional Turbulent Boundary-Layer Velocity Profiles (76-APM-C) **AM 20**; (D) **AM 699**

Wall Suction

Symmetrical Laminar Channel Flow With Wall Suction (75-WA/FE-6) **F 469**; (D) **F 474**; (AC) **F 475**

Wallis, R. L. A Simple Model of Submarine Hoses in Single Point Moorings (BN) **AM 170**

Walls

Perturbation Solutions for Laminar Film Condensation on Nonisothermal Walls (BN) **AM 367**

Walowit, J. A. Traction Characteristics of a MIL-L-7808 Oil (76-LubS-19) **L 607**; (D) (AC) **L 612**

Walter, M. H. A Theoretical and Experimental Investigation of Creep Problems With Variable Temperature (76-WA/APM-25) **AM 639**

Walther, R. Guide Vane Vibrations Caused by Wakes and Blower Noise—Part 1: The Vortex Degeneration in the Asymmetrical Wakes (75-DET-60) **I 948**

Wambsganss, M. W. Added Mass and Damping of a Vibrating Rod in Confined Viscous Fluids (76-APM-27) **AM 325**

Wanderlingh, F. Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron

Irradiation (D) **F 95**; (AC) **F 96**

Wang, B. P. Efficient Optimal Design of Suspension Systems for Rotating Shafts (75-DET-91) **I 1026**

Wang, C.-G. What Limits the Speed of Marine Transportation? **F 1**

Wang, C.-Y. The Squeezing of a Fluid Between Two Plates (76-WA/APM-14) **AM 579**

Wang, I.-C. Application of the Deformation Theory of Plasticity for Determining Elastoplastic Stress and Strain Concentration Factors (76-DE-B) **I 1152**

Wang, J. T. S. On the Theories of Ring Vibrations (BN) **AM 503**

Wang, T. G. An Experimental Study of Internal Hygrocysts **F 688**; (D) **F 692, 693**; (AC) **F 693**

Ward, A. L. Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**

Ward, T. M. The Hydrodynamics Laboratory at the California Institute of Technology—1976 **F 740**

Warzee, G. A Finite-Element Method for Through Flow Calculations in Turbomachines (76-FE-12) **F 403**; (D) **F 414-419**; (AC) **F 419**

Wassel, A. T. Mean Beam Lengths for Spheres and Cylinders (TN) **HT 308**; Molecular Gas Radiation in a Laminar or Turbulent Pipe Flow (76-HT-Q) **HT 101**

Waste Energy

Urban Utilization of Waste Energy From Thermal-Electric Power Plants (75-Pwr-12) **P 309**

Waste Treatment

Ecosystem Approach to the Simulation and Control of an Oil Refinery Waste Treatment Facility (76-Aut-P) **DS 20**

Watanabe, I. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Watanabe, K. Transient Response of an Elastic Half Space Subjected to a Reciprocating Antiplane Shear Load (76-APM-KK) **AM 625**

Watanabe, Y. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**

Water

An Analysis of Free Convective Heat Transfer With Density Inversion of Water Between Two Horizontal Concentric Cylinders (TN) **HT 670**

Augmentation of Laminar Flow Heat Transfer in Tubes by Means of Twisted-Tape Inserts (76-HT-QQ) **HT 251**

Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (76-FE-2) **F 342**; (D) **F 351**; (AC) **F 352**

Microbubble Spectra and Superheat in Water and Sodium, Including Effect of Fast Neutron Irradiation (75-FE-15) **F 87**; (D) **F 94, 95**; (AC) **F 96**

Simultaneous Boiling and Forced Convection Heat Transfer From a Horizontal Cylinder to Water (76-HT-UU) **HT 395**

Water Base Mud

Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) **I 701**

Water Distribution Systems

Transient Natural Convection of Water in a Horizontal Pipe With Constant Cooling Rate Through 4 C **HT 581**

Water Quality

Oily Bilge Water Treatment With a Tubular Ultrafiltration System (76-ENAs-20) **I 1215**

Water Tunnels

The Hydrodynamics Laboratory at the California Institute of Technology—1976 **F 740**

On Separation of a Divergent Flow at Moderate Reynolds Numbers (76-APM-34) **AM 227**

Water Vapor Emissivity

A Simple Parameterization for the Water Vapor Emissivity (TN) **HT 676**

Water Waves

Scattering of Water Waves by a Pair of Semi-Infinite Barriers (D) (AC) **AM 378**

Waterman, W. F. Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

Water/Residual Oil Emulsions

The Effect of Water/Residual Oil Emulsions on Air Pollutant Emissions and Efficiency of Commercial Boilers (75-WA/APC-1) **P 425**; (D) **P 431, 433**; (AC) **P 434**

Wave Equations

An Approximate Periodic Solution of a Weakly Nonlinear Wave Equation (BN) **AM 504**

Wave Forms

Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Wave Impact Loads

A Dynamic Simulation of Wave Impact Loads on Offshore Floating Platforms (75-WA/OcE-4) **I 550**

Wave Motion

Observations of Wave Motion and Upstream Influence in a Stratified Fluid (76-APM-Q) **AM 222**

Wave Packets

Nonlinear Propagation of Wave-Packets on Fluid Interfaces (76-WA/APM-11) **AM 584**

Wave Phenomena

Asymptotic Wave Theory (BR) **AM 701**

Wave Propagation

Spectral Representation of Wave Propagation in Thermoviscoelastic Medium I (BN) **AM 177**

Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**

Wave Propagation in Finite Rods of Voigt Material (BN) **AM 182**

Wave Propagation in the Linear Theory of Elastic Shells (76-APM-J) **AM 281**

Wave Response

Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**

Wave Speed

Response of a String to an Accelerating Mass (76-WA/APM-26) **AM 675**

Wavelengths

Measurement of the Propagation of Long-Wavelength Disturbances Through Turbulent Flow in Tubes (75-FE-22) **F 70**; (D) (AC) **F 78**

Waves

The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**

Linear and Nonlinear Waves (BR) **AM 190**

Wax

An Experimental Investigation of Stick-Slip in Hydrostatic Extrusion Using Wax to Simulate Metals (75-WA/Prod-32) **I 795**

Wayner, P. C., Jr. Evaporation From a Capillary Tube (76-HT-NN) **HT 178**

Wear

Attritious Wear of Silicon Carbide (75-WA/Prod-36) **I 1125**

Pressure Distribution for Patchlike Contact in Seals With Frictional Heating, Thermal Expansion, and Wear (76-LubS-11) **L 596**

Theory of Thermoelastic Instability of Rotating Rings in Sliding Contact With Wear (75-Lub-22) **L 277**; (D) **L 284**; (AC) **L 285**

Wear Characteristics

Metal Oxycarbides as Cutting Tool Materials (75-WA/Prod-3) **I 279**

Wear Mechanisms

An Analysis of Tool Life Based on Flank-Face Wear—Part 1: Theory (75-WA/Prod-28) **I 221**; Part 2: Comparison of Theory With Experimental Observations (75-WA/Prod-29) **I 227**

Weather Forecasting

Statistical Weather Forecasting (76-Aut-A) **DS 49**

Weber, H. E. Control of Free-Stream Turbulence by Means of Honeycombs: A Balance Between Suppression and Generation (D) **F 351**; (AC) **F 352**

Wedeven, L. D. Some Effects of Lubricant Starvation in Cylindrical Roller Bearings (D) (AC) **L 72**

Wedeven, V. Elastohydrodynamic Lubrication in an Instrument Ball-Bearing (D) (AC) **L 249**; A Simplified Model for the Elastohydrodynamic Traction Between Rollers (D) **F 361**

Wei, S. A Finite-Element Method for Through Flow Calculations in Turbomachines (D) **F 414**; (AC) **F 419**

Weight

Optimization of a Ribbed Table for Minimum Weight and Minimum Deflection (75-DE-K) **I 30**

Weigle, B. Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading (TB) **F 573**

Weiner, P. D. Maximum Moment Capability of Pipe With Various D/T Ratios (75-Pet-12) **I 1107**

Weinmann, K. J. Review of Materials Processing Literature 1971–72 **I 1**; Part 3: Review of German Language Literature **I 19**

Weissenberger, S. Optimal Command Generation for Tracking a Class of Discontinuous Trajectories (76-Aut-R) **DS 167**

Weld Metals

Creep Behavior of SMA Type 316 Weld Metal With Controlled Residual Elements (75-WA/PVP-19) **PVT 194**

Weld Overlay Cladding

Mechanism of Underclad Cracking—Combined Effects of Residual Strain and Heat-Affected Zone Ductility (76-Mat-S) **MT 348**

Susceptibility to Underclad Cracking in Relation to Chemical Composition (76-Mat-R) **MT 342**

Weld-Deposited Materials

Elevated Temperature Tensile Properties of Weld-Deposited Austenitic Stainless Steels (75-WA/Mat-7) **MT 213**

Welded Structures

Optimal Design of a Class of Welded Structures Using Geometric Programming (75-DET-86) **I 1021**

Welds

Probabilistic Assessment of Low-Cycle Fatigue Behavior of Structural Welds (75-PVP-29) **PVT 26**

Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**

Well Bores

Removal of Water Base Mud From Well Bores in Permafrost Zones (75-Pet-38) **I 701**

Wellauer, E. J. Application of EHD Oil Film Theory to Industrial Gear Drives (75-PTG-1) **I 626**; (D) **I 631-633**; (AC) **I 633**

Wells, C. H. Uniaxial Creep Behavior of Metals Under Cyclic Temperature and Stress or Strain Variations (76-WA/Apm-6) **AM 445**

Welsh, M. C. Flow Control in Wide-Angled Conical Diffusers **F 728**

Welty, J. R. Velocity Measurements for Buoyancy-Induced Flow in Mercury Adjacent to Vertical Single Cylinders (TN) **HT 146**

Wendt, R. L. Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**

WERCO Program

Computer Program—Bulletin 107 **PVT 188**

Werle, M. J. A Direct Method of Calculating Through Separated Regions in Boundary Layer Flow (TB) (D) **F 571**; (AC) **F 572**

Wesenberg, D. L. Elastic-Plastic Response of 6061-T6 Aluminum Beams to Impulse Loads (76-APM-39) **AM 259**

Western Coals

Western Coals—Laboratory Characterization and Field Evaluations of Cleaning Requirements (73-WA/Fu-1) **P 97**

Wet Geothermal Formations

Physical Modeling of Combined Forced and Natural Convection in Wet Geothermal Formations (75-WA/HT-70) **HT 213**

Wet Peaking Towers

Dry and Wet-Peaking Tower Cooling Systems For Power Plant Application (75-WA/Pwr-2) **P 335**; (D) **P 347**; (AC) **P 348**

Wet Steam Flow

Some Experiments on Wet Steam Flow Visualization in Large Steam Turbine Blading (TB) **F 573**

Wetenkamp, H. R. Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**

Wetting

Effect of Wetting on Friction Factors for Turbulent Flow of Mercury in Annuli (TB) **F 113**

Wheel Treads

Hot Spot Heating by Composition Shoes (75-RT-2) **I 453**; (D) **I 457**; (AC) **I 458**

Wheeler, L. *(reviewer)* Review of Continuum Physics (BR) **AM 384**

Wheeler, L. T. Saint-Venant's Principle and the Torsion of Thin Shells of Revolution (76-WA/APM-15) **AM 663**; Wave Propagation in a Chemically Reacting, Linear Elastic Sphere (76-APM-7) **AM 43**

Whicker, D. Dynamic Analysis of Elastohydrodynamic Squeeze Films (75-Lub-5) **L 401**; (D) **L 407**; (AC) **L 408**

Whirl Data

Analysis of Flexible Rotor Whirl and Whip Using a Realistic Hydrodynamic Journal Bearing Model (75-DET-68) **I 1135**; (D) **I 1143**; (AC) **I 1144**

Whitelaw, J. H. The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**; Turbulent Mixing of Coaxial Jets With Particular Reference to the Near-Exit Region (76-FE-36) **F 284**; (D) (AC) **F 291**

Whitford, R. P. Effects of High-Operating Speeds on

Tilting Pad Thrust Bearing Performance (75-LubS-6) **L 73**; (D) (AC) **L 80**

Whitman, G. B. *(author)* Linear and Nonlinear Waves (BR) **AM 190**

Whitney, D. E. The Human Operator in Manual Preview Tracking (an Experiment and Its Modeling Via Optimal Control) **DS 407**

Wiederrich, J. L. Momentum Balancing of Four-Bar Linkages (76-DET-28) **I 1289**

Wiginton, C. L. Incompressible Laminar Entrance Flow in a Circular Sector Duct (BN) **AM 357**

Wigley, G. The Calculation of Furnace-Flow Properties and Their Experimental Verification (75-HT-8) **HT 276**

Wilcock, D. F. Effects of High-Operating Speeds on Tilting Pad Thrust Bearing Performance (D) (AC2 **L 80**; International Lubrication Conference: Tokyo, Japan—June, 1975 (FR) **L 193**; JSLE-ASLE International Lubrication Conference—Tokyo, 1975 (FR) **L 353, 483**; Super Laminar Flow in Bearings—A Review of the Second Leeds-Lyon Symposium, Lyons, France, September 17–19, 1975 (FR) **L 5**

Wilcox, L. E. Minimizing Assembly Runout in Turbo-machines Made With Curvic® Couplings (75-GT-43) **P 37**

Williams, A. J., Jr. Maximizing Distance of the Golf Drive: An Optimal Control Study (D) (AC) **DS 211**

Williams, J. Surface Integrity in Machining AISI 4340 Steel (D) (AC) **I 1007**

Williams, J. J. The Influence of Constitutive Relationships on Stress-Redistribution Times in Creeping Structures (BN) **AM 173**

Wilson, D. J. Turbulent Wall Jets With Cylindrical Streamwise Surface Curvature (76-FE-O) **F 550**

Wilson, G. J. Vibration Analysis of Axial Flow Turbine Disks Using Finite Elements (75-DET-80) **I 1008**

Wilson, J. F. Dynamics of Flexible Cables Under Combined Vortex and Parametric Excitation (76-Aut-KK) **DS 286**

Wilson, S. D. R. Unsteady and Two-Dimensional Flow of a Condensate Film (TN) **HT 313**

Wilson, W. R. D. Hydrodynamic Lubrication of Hydrostatic Extrusion (75-Lub-27) **L 27**; Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**; Lubrication by a Melting Solid (75-Lub-26) **L 22**; A Refined Model for the Hydrodynamic Lubrication of Strip Rolling (75-Lub-32) **L 426**; (D) **L 431, 432**; (AC) **L 432**; A Thermal Hydrodynamic Lubrication Theory for Hydrostatic Extrusion of Low Strength Materials (D) **L 342**; (AC) **L 343**

Wind Electric Conversion Systems
Wind-Powered Electric Utility Plants (75-WA/Pet-1) **I 293**

Wind Shear
Numerical Study of the Velocity and Temperature Fields in a Flow-Through Reservoir (75-WA/HT-60) **HT 353**

Wind Tunnels
Comprehensive Design of Axisymmetric Wind Tunnel Contractions (D) **F 131**; (AC) **F 132**

Periodic Flow in a Wind Tunnel Produced by Rotating Shutters (76-FE-B) **F 278**; (D) **F 281**; (AC) **F 282**

Windows
Spherical Shell Sector Acrylic Plastic Windows with 12,000 ft Operational Depth for Submersible Alvin (75-WA/OcE-2) **I 523**

Winer, W. O. Chemical Effects of Lubrication in Contact Fatigue—Part III: Load-Life Exponent, Life Scatter, and Overall Analysis (75-Lub-45) **L 308**; (D) **L 315–317**; (AC) **L 317**; Influence of Pressure Viscosity of Lubrication Oils on Pressure, Temperature, and Film Thickness in Elastohydrodynamic Rolling Contacts (D) **L 507**; (AC) **L 508**; Infrared Temperature Mapping in Elastohydrodynamic Lubrication (75-Lub-13) **L 236**; (D) **L 242**; (AC) **L 243**; *(contributor)* List of Theses Topics in Tribology—II: Thick-Film EHD Lubrication (76-Lub-G) **L 395**; Prediction of Traction in Sliding EHD Contacts (75-Lub-7) **L 362**; (D) **L 365, 366**; (AC) **L 366**

Wing Bodies
The Turbulent Boundary Layer Near a Corner (76-APM-PP) **AM 567**

Winn, L. W. Design and Evaluation of a 3 Million DN Series-Hybrid Thrust Bearing (76-LubS-17) **L 586**; (D) (AC) **L 594**

Wire Screens
Low Reynolds Number Loss Coefficient for Fine-Mesh Screens (TB) **F 762**

Wires
A Study of Transient Heat Transfer in Long Insulated Wires (76-HT-U) **HT 127**

Temperature Regulation of a Plastic-Insulated Wire in Radiant Heating (TN) **HT 678**

Turbulent Boundary Layer and Flow Resistance on Plates Roughened by Wires (76-FE-6) **F 635**; (D) (AC) **F 643**

Wirsching, P. H. On the Behavior of Statistical Models Used for Design (75-WA/DE-28) **I 601**; On the Use of the Extreme Value Distribution in Reliability Analysis and Design (75-DET-123) **I 1080**

Wislicenus, G. F. Cavitation in Relation to the Design and Operation of Hydrodynamic Machinery (Op) **F 590**

Witkin, D. E. Design Philosophy of Pressure Vessels for Service Above 10 ksi (70 MPa) (76-PVP-62) **PVT 266**

Witze, P. O. Influence of Laminar Wall Boundary Layers on Turbulent Jet Behavior (TB) **F 773**

Wollersheim, D. E. Free Convection Heat Transfer To Non-Newtonian, Dilatant Fluids From a Horizontal Cylinder (TN) **H 144**

Wolowodiuk, W. Thermal Shock Testing of Fillet-Type Tube-to-Tubesheet Welds (76-PVP-35) **PVT 291**

Wong, B. K. "Heat Valve" Effects in the Ground Thermal Regime **HT 537**

Wong, J. Y. Performance and Stability Characteristics of an Electrodynamically Levitated Vehicle Over a Split Guideway (76-Aut-HH) **DS 277**

Woo, D. M. Analysis of Deep-Drawing Over a Tractrix Die (76-Mat-B) **MT 337**

Wood, D. J. Pressure Surge Propagation in Thick-Walled Conduits of Rectangular Cross Section (D) **F 459**; (AC) **F 460**

Wood, J. R. Detailed Flow Investigations within a High-Speed Centrifugal Compressor Impeller (D) **F 399**; (AC) **F 401**

Woodard, H. S. Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Wavas (75-GT-33) **P 247**; (D) **P 255, 256**;(AC) **P 257**

Woodford, D. A. Some New Approaches in the Analysis of High-Temperature Deformation (76-Mat-F) **MT 2**

Woods, W. A. Experimental Results and Analysis of Flow in a Pneumatic Tube System During a Vehicle Transit (D) **F 583**; (AC) **F 585**

Woollatt, D. Is There Any Fluids Engineering Challenge Left In Positive Displacement Machinery? (Op) **F 142**

Work Potentials
Work Bounding Functions for Plastic Materials (76-APM-HH) **AM 434**

Work Redistribution
Reduction of End-Wall Effects in a Small, Low-Aspect-Ratio Turbine By Radial Work Redistribution (75-GT-7) **P 130**

Work Zones
Lubricant Flow in a Plastohydrodynamic Work Zone (75-Lub-9) **L 16**

Workability
Workability of Aluminum Alloy 7075-T6 in Upsetting and Rolling (75-WA/Prod-13) **I 800**

Work-Hardening Laws
Laws for Work-Hardening and Low-Temperature Creep **MT 76**

Workpiece
Investigation on the Role of Workpiece Grain Size in Electro-chemical Machining Process (75-WA/Prod-25) **I 360**

Work-Restricted Forging
Identification of a Work Restricted Forging Process for Optimization by Adaptive Control (75-WA/Prod-24) **I 620**

Wright, J. H. The Onset of Thermohaline Convection in a Linearly-Stratified Horizontal Layer (76-HT-29) **HT 558**

Wrinkling
Stability of Internally Pressurized Vessels With Ellipsoidal Heads **PVT 157**

Wu, E.-R. Gas-Lubricated Porous Bearings—Infinitely Long Journal Bearings, Steady-State Solution (75-Lub-24) **L 453**; (D) (AC) **L 462**

Wu, H.-C. Strain-Rate Effect in the Endochronic Theory of Viscoplasticity (76-APM-G) **AM 92**

Wu, R.-S. Axial Heat Conduction Effects on Thermal Instability of Horizontal Plane Poiseuille Flows Heated From Below **HT 564**

Wu, S. M. Computer Design of a Minimum Vibration Face Milling Cutter Using an Improved Cutting Force Model (75-WA/Prod-4) **I 807**; Identification of Papermaking Process From Closed Loop Data by Bivariate Time Series Analysis (76-Aut-MM) **DS 291**; An Investigation of Computer Control of Machining Chatter (75-WA/Prod-26) **I 1209**; (D) **I 1213**; (AC) **I 1214**; Modeling of System Dynamics and Disturbance From Paper-Making Process Data (TB) **DS 197**; A Stochastic Approach to Characterization of Machine Tool System Dynamics Under Actual Working Conditions (75-WA/Prod-7) **I 614**

Wyler, J. S. Generalized Flow Across an Abrupt Enlargement (75-WA/FM-1) **P 327**; (D) **P 333**; (AC) **P 334**

X

X-ray Techniques
Thermal Stresses in Heat-Treated Fibrous Composites (76-WA/APM-13) **AM 619**

Y

Yadigaroglu, G. An Investigation of Heat Transport In Oscillatory Turbulent Subcooled Flow (75-WA/HT-2) **HT 630**

Yaglom, A. M. *(author)* Statistical Fluid Mechanics, Vol. II (BR) **AM 521**

Yahagi, T. Minimax Output Feedback Regulators (76-Aut-JJ) **DS 270**

Yamaguchi, K. Measurement of Temperature Distribution Within Tool Using Powders of Constant Melting Point (75-WA/Prod-5) **I 607**

Yamamoto, A. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Yamamoto, K. Three-Dimensional, Numerical Analysis of Laminar Natural Convection in a Confined Fluid Heated From Below (76-HT-RR) **HT 202**; (Er) **HT 519**

Yamanaka, K. Preliminary Study of Low Emission Gas Turbine Combustor With Airblast Fuel Atomizer (75-GT-31) **P 15**

Yamanaka, N. Performance of Radial Flow Turbines Under Pulsating Flow Conditions (75-GT-30) **P 53**; (D) (AC) **P 59**

Yamazaki, Y. An Experimental Investigation of Heat Transfer Around A Tube in A Bank (76-HT-AAA) **HT 503**

Yang, C. C. Stress Concentration Factors From Overlapping Stress Fields in Uniaxial Tension (74-WA/DE-3) **I 332**

Yang, H. C. Generalized Plane Problems of Elastic Inclusions in Anisotropic Solids (76-APM-JJ) **AM 424**

Yang, H. T. Potential Flow Model for an Impulsively Started Circular Cylinder (76-APM-32) **AM 213**

Yang, W.-J. Theory on Thermal Instability of Binary Gas Mixtures in Porous Media (76-HT-T) **HT 35**

Yao, L. S. Thermal Analysis of a Fast-Moving Slab in Two Adjacant Temperature Chambers (TN) **HT 326**

Yao, S. C. Aerodynamic Design of Cooling Tower Drift Eliminators (75-WA/Pwr-5) **P 450**; (D) (AC) **P 456**; Heat and Mass Transfer From Freely Falling Drops (75-WA/HT-37) **HT 120**

Yarn Properties
The Effects of Opening Roller Wire Design and Operating Speed on the Properties of Open-End Cotton Yarn (75-Tex-3) **I 664**

Yarns
Balloon Collapse in Ring-Spinning (75-Tex-2) **I 658**

Yates, C. C. Flow Development in a Parallel Plate Channel (75-LubS-4) **L 145**; (D) **L 154, 155**; (AC) **L 156**

Yawing Motion
The Frequency of Inertial Waves in a Rotating, Sectored Cylinder (76-WA/APM-22) **AM 571**

Yeo, L. T. Optimal Control of a National Economic System With Full Employment (76-Aut-Y) **DS 80**

Yield Strength Variations
Effect of Yield Strength Variations on the Inelastic Response of a C-Seal (75-PVP-31) **PVT 33**; (D) **PVT 45**; (AC) **PVT 46**

Yielding
Finite Element Solutions for Crack-Tip Behavior in Small-Scale Yielding (76-Mat-O) **MT 146**

Yildiz, M. Mean-Square Response of Thermoviscoelastic Medium to Nonstationary Random Excitation (76-APM-9) **AM 150**; Spectral Representation of Wave Propagation in Thermoviscoelastic Medium I (BN) **AM 177**

Yoder, G. R. Initial Crack Extension in Two Intermediate-Strength Aluminum Alloys (76-Mat-D) **MT 152**

York, R. E. Supersonic Compressor Cascades—An Analysis of the Entrance Region Flow Field Containing Detached Shock Waves (75-GT-33) **P 247**; (D) **P 255, 256**; (AC) **P 257**

Yoshida, K. Dynamics of a Power Collector With Friction Dampers (75-DET-30) **I 306**

Yoshida, T. Experimental Results of Full Scale Air-Cooled Turbine Tests (75-GT-116) **P 103**

Yoshimura, T. On the Identification of Noise Covariances in Continuous Linear Systems (76-Aut-LL) **DS 296**; The Predictions of Air Pollution Levels by Nonphysical Models Based on Kalman Filtering Method **DS 375**

Young, K. R. An Algorithm for Automatic Reduction of Complex Signal Flow Graphs (76-Aut-RR) **DS 367**

Young, W. C. *(author)* Formulas for Stress and Strain (BR) **AM 522**

Young, W. E. Gas Turbine Hot-Stage Parts in Aggressive Atmospheres (75-WA/CD-1) **P 540**

Yovanovich, M. M. Free Convection Heat Transfer From Spheroids (76-HT-BBB) **HT 452**

Yu, C. P. A Random Cell Model for Predicting Filtration Efficiency of Fibrous Filters (BN) **AM 184**

Yu, J. S. An Approximate Analysis of Laminar Dispersion in Circular Tubes (76-WA/APM-10) **AM 537**

Yu, K. H. Measurements of Velocity Wave Forms in the Dog Aorta (76-FE-H) **F 297**

Yukitoshi, T. Low-Alloy High-Strength Steel for Boiler Tubes (LowC-9Cr-2Mo) (75-WA/PVP-2) **PVT 173**

Z

Zahalak, G. I. Partially Activated Human Skeletal Muscle: An Experimental Investigation of Force, Velocity, and EMG (76-APM-8) **AM 81**

Zaima, S. Theoretical Thermoelastic Consideration on Accuracy in Machining Metals (TB) **I 1368**

Zamrik, S. Y. The Application of "Strain Range Partitioning Method" to Torsional Creep-Fatigue Interaction (75-WA/Mat-8) **MT 244**

Zaretsky, E. V. Chemical Effects of Lubrication in Contact Fatigue—Part I: The Test Program, Data, and Metallurgical Observations (D) **L 298**; Part II: The Statistical Analysis, Summary, and Conclusions (D) **L 306**; (AC) **L 307**; Dynamic Capacity and Surface Fatigue Life for Spur and Helical Gears (75-Lub-19) **L 267**; (D) **L 275**; (AC) **L 276**; Endurance and Failure Characteristic of Main-Shaft Jet Engine Bearing at 3 X 10^6 DN (76-LubS-16) **L 580**; A Life Study of Ausforged, Standard Forged, and Standard Machined AISI M-50 Spur Gears (75-Lub-20) **L 418**; (D) (AC) **L 425**; *(contributor)* List of Theses Topics in Tribology—II: Rolling Element Bearings (76-Lub-G) **L 397**; Operating Limitations of High-Speed Jet-Lubricated Ball Bearings (75-Lub-21) **L 32**; The Performance of a High-Speed Ball Thrust Bearing Using Silicon Nitride Balls (D) **L 559**; (AC) **L 563**; Prediction of Rolling Contact Fatigue Life in Contaminated Lubricant: Part II—Experimental (D) (AC) **L 392**

Zarling, J. P. An Analysis of Laminar Flow and Pressure Drop in Complex Shaped Ducts **F 702**

Zebrowski, T. F. Lower Bound for Fundamental Torsional Frequencies (BN) **AM 510**

Zelazny, S. W. Prediction of Turbulent Jets in Coflowing Quiescent Ambients (D) **F 332**; (AC) **F 333**

Zerkle, R. D. Compressibility Effects in Electrochemical Machining (75-Prod-B) **I 423**; Verification of a One-Dimensional Two-Phase Flow Model of the Frontal Gap in Electrochemical Machining (75-Prod-D) **I 431**

Zetlmeisl, M. J. High-Temperature Corrosion in Gas Turbine and Steam Boilers by Fuel Impurities—Part VI: A Statistical Study of the Effects of Sodium, Temperature and Additive on Corrosion Rate and Slag Friability (75-WA/CD-5) **P 506**; Part VII: Evaluation of Magnesium-Aluminum-Silicon Combinations as Corrosion Inhibitors (75-WA/CD-6) **P 511**

Zhilnikov, E. P. An Investigation in the Field of Elastohydrodynamics (76-LubS-4) **L 491**

Zone Averaged Measurements
Some Measured Temperature Characteristics in a Two-Dimensional Heated Jet of Air (75-WA/TM-1) **P 501**

Zsolcsak, S. J. Effect of Damping on the Lateral Critical Speeds of Rotor-Bearing Systems (75-DET-38) **I 505**; (D) (AC) **I 513**

Zuber, N. An Experimental Investigation of the Thermally Induced Flow Oscillations in Two-Phase Systems (75-WA/HT-6) **HT 616**

Zukoski, E. E. Experiments Concerning the Response of Supersonic Nozzles to Fluctuating Inlet Conditions (75-GT-40) **P 60**

Zweig, J. E. Two-Fluid Flow Between Rotating Annular Disks (75-Lub-18) **214**; (D) (AC) **222**